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ROGERS PASS ENVIRONMENTAL
ASSESSMENT PANEL

PUBLIC MEETINGS

CP RAIL ROGERS PASS DEVELOPMENT PROJECT

PLACE: Revelstoke, B.C.

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ROGERS PASS ENVIRONMENTAL
ASSESSMENT PANEL

In the matter of Public Meetings of the
Environmental Assessment Panel on CP
Rail's proposed new track development
in Rogers Pass.

PANEL MEMBERS:

P.J. Paradine -- Chairman

Dr. W. Ross

Mr. G. Tench

Held in the Community and Recreation Centre,
Revelstoke, British Columbia, on Wednesday,
the 8th day of June, 1983, at the hour of
7:00 p.m., Local Time.





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* * * *



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1 ---Upon Commencing at 7:10 p.m.

2 THE CHAIRMAN (MR. PHIL PARADINE):

3 Good evening, ladies and gentlemen. I am Phil
4 Paradine, Chairman of the Environmental Assessment
5 Panel appointed to consider the environmental and
6 social effects of the CP Rail proposal to twin and
7 construct tunnels through Rogers Pass and Glacier
8 National Park.

9 The other members of my team are
10 Bill Ross and George Tench. This is the final
11 round of meetings, the purpose of which is to
12 advise the Minister of Environment on the means by
13 which this project can proceed in an environmentally
14 sound manner. This is being done in accordance with
15 terms of reference provided to us by the Minister
16 of Environment, copies of which are in our
17 preliminary report and I believe copies of that are
18 available at the back of the room.

19 Subsequent to our
20 preliminary report last year, CP Rail presented
21 further information in April of this year. This
22 has been available to the public, and we are now
23 asking that participants in the review present their
24 views and opinions on how this project may proceed
25 in an environmentally safe manner.

26 Following these meetings, the
27 panel will be preparing its final report to the Minister.
28 We also will be holding meetings in Golden and
29 Calgary.
30



1 I guess at this point I should
2 reiterate that CTC has, in principle, approved this
3 project and that the mandate of the panel is to
4 ensure the project proceeds in a way that minimizes
5 the impact on the environment. That is the sort of
6 information we are seeking for our report.

7 If you want copies of the report
8 or additional information, please leave your name at
9 the back of the room there. Somebody will take that
10 information for you.

11 The meeting procedures have
12 been distributed, and I will not go into detail. I am
13 asking speakers to try to limit their comments to
14 20 minutes and then we can get into questioning to
15 clarify any information that has been put forward by
16 speakers. We are making transcripts, and therefore
17 I ask that you identify yourself and the organization
18 that you represent if you come forward to speak.
19 You can either use the microphone at the front if you
20 are asking a question, or if you want to sit down
21 to use the full 20 minutes, you can come up here at
22 the front and probably sit down if you have got some
23 papers that you would like to spread out.

24 We will be having a coffee break
25 near the middle of the session, and the schedule
26 today is that following my brief remarks here, John
27 Fox of CP Rail will be making a presentation,
28 following which we have an overview statement from
29 Parks Canada, Bruce Leeson, I believe, and a detailed
30



1 presentation by Mr. McKnight. We then have Mr.
2 McCrory, I believe, registered to speak. So without
3 further ado, I think I should go to John Fox.
4 So that if you wish to register to speak or indicate
5 that you have a long presentation to make, please
6 let Suzanne Latour know at the back of the room.
7 If you just want to speak on an ad hoc basis after
8 we have gone through the registered speakers, you will
9 be able to come up here and use the microphone. I
10 will be calling for questions from the floor.

11 So without further ado, I would
12 like to pass the microphone over to CP Rail and Mr.
13 Fox for his statement. Perhaps you would like to
14 introduce anybody you wish to on your team.
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1 (Fox)

2 MR. JOHN FOX (CP RAIL): Thank you, Mr.
3 Chairman. Good evening, ladies and gentlemen. I
4 am John Fox and I am Vice-President of Engineering,
5 Special Projects for CP Rail. My cohort on my
6 right is Meryl Klassen, who is my Design Engineer
7 in Calgary, and seated in the first two rows in front
8 of me here are so many guys I am not going to bother
9 introducing. They are all consultants and I pay them.
10 So they can introduce themselves when they get up
11 here.

12 We have a rather extensive
13 display, as you can see, around the room, and for
14 those of you who are perhaps in the engineering world
15 or construction world, it will tell you something
16 hopefully. Others are pretty pictures of buildings
17 and things like that, but they all mean something
18 in the total context of what it is we propose to do
19 in the Roger's Pass area.

20 At the back of the room where
21 Suzanne is, there is a red book, if you have not
22 already picked one up, and this goes through very
23 briefly the entire project with the exception perhaps
24 of the nine mile tunnel. In addition to that, there
25 is a little red folder also on the table, and if
26 you pick this up and go through it with the display,
27 which you can do at coffee break if you
28 are so inclined, and if you will note on the posters,
29 you will see letters and they refer to a little bit
30



(Fox)

1 of a description in this particular folder. So that
2 might help you understand what we have on the board.

3 I propose tonight to give you
4 a very general overview of what we have done and
5 what we propose, and then I will turn it over to
6 the next speaker. Last year I gave a rather lengthy
7 discussion of our proposal, where it was, what we
8 needed it for, et cetera, et cetera. I do not
9 propose to go through that again. If anyone that
10 missed it wishes to have it, it is in the proceedings
11 of this hearing.

12 Mr. Chairman, ladies and
13 gentlemen, the Federal Environmental Assessment
14 Review Officer interim decision in May last year
15 allowed us to proceed with the portal construction
16 for the Rogers Pass tunnel and clearing of the
17 surface route for an access road to carry out further
18 environmental and geotechnical investigations.

19 The west portal structure was
20 completed last year, and repaving of the Trans Canada
21 Highway is presently being completed. Access to the
22 east portal and the retaining walls at the east
23 portal were completed last year and rock
24 excavation is presently underway. This should be
25 finished within the next four to five weeks.

26 The surface route from Rogers to
27 the east portal of the short tunnel was cleared
28 for the investigations to be described later.

29 As you have seen by the reports
30



1 (Fox)

2 we have presented to you and the responses we have
3 made to your further requests for information,
4 CP Rail has done a very large amount of work in the
5 14 months since the meeting of last April. I feel
6 that we have more than adequately met or exceeded
7 the requirements for further information requested
8 by you and Parks Canada. I am looking forward to
9 these meetings to allow us to thoroughly present the
10 information to you and the public. We appreciate
11 the opportunity to describe and discuss work completed
12 to date and to demonstrate our commitment to complete
13 the Rogers Pass Project with the highest level of
14 concern for the environment of Glacier National Park.

15 I might also add there that
16 those are not just words. That is a commitment.

17 I am also looking to these meetings
18 to serve as a forum to answer any and all questions
19 that the panel, their experts and Parks Canada may
20 have on environmental, engineering or commitment
21 issues. We have available for these hearings all
22 the experts who have worked with CP Rail over the
23 last year and in many cases since the beginning of
24 the project. We have done this to ensure that as
25 many requests for information as possible can be
26 answered during the hearings.

27 The report entitled "Rogers Pass
28 Project: Submittal to Federal Environmental
29 Assessment Review Office" dated June 1983 was
30



1 (Fox)

2 prepared specifically for this hearing.

3 In this report and all the other
4 environmental and engineering reports previously
5 submitted to you, we have made every attempt to
6 respond to all expressed concerns. I also believe
7 that we have responded to both the panel's and
8 Parks Canada's recent requests for further environ-
9 mental information.

10 Our basic approach has been to
11 define terms of reference for all studies through
12 discussions with Parks Canada. When work was
13 completed in mid-February of this year, we asked
14 Parks Canada and their experts to come to a workshop
15 to discuss results of all studies and to ask for
16 their comments and suggestions. We then submitted
17 draft copies of all reports to Parks Canada prior
18 to finalizing them for the Fearo Review. We have
19 responded to Parks Canada's subsequent comments, as
20 well as to a list of items which the panel indicated
21 were not addressed completely, either verbally or
22 in reports submitted prior to this meeting.

23 I do not plan to elaborate on
24 all the environmental studies we have conducted, as
25 I have consultants here who are more able to discuss
26 the technical details, and who will do so in the
27 appropriate sessions. However, I would like to give
28 you a brief summary of the work we have done in
29 preparation for this public meeting and the work
30



1 (Fox)

2 we will be doing in the future to ensure that when the
3 new railway is built it will respect the national
4 park through which it passes.

5 Requests for further information
6 have come from two sources: the panel in their
7 preliminary review last April, and Parks Canada in
8 meetings since that time. The panel's requests were
9 grouped into five aspects of the project: the
10 Rogers Pass tunnel, the ventilation shaft, the
11 surfact route, the work force, and the responsibility
12 for mitigative measures and monitoring.

13 Looking at the questions on the
14 Rogers Pass tunnel first, the proposed new track will
15 pass through one avalanche path, and that is the
16 Ross Peak slide. That is located at the west portal
17 of the Rogers Pass tunnel. Automatic train signals
18 will govern trains at this location, enabling a
19 westward train to stop within the portal structure, if
20 required. Eastward trains will stop clear of the west
21 perimeter of the Ross Peak slide, if required. I
22 should say this is done by dispatchers just by
23 flicking a switch.

24 The existing program of working
25 with Parks Canada and the Canadian Army to control
26 avalanches by means of gunfire will be continued.
27 Procedures now used in controlling train movements
28 in affected areas will also be continued.

29 With regard to disposal of
30



1 (Fox)

2 material, Parks Canada has stipulated no spoiling
3 and no borrowing within the park boundary, so we
4 have come up with the following general approach:
5 balanced cuts and fills on the surface route east
6 of the tunnels and the use of a minor amount of
7 material as subgrade for double tracking to the west
8 down as far as Flat Creek.

9 Concern was raised for the
10 environmental effects of the double tracking to the
11 west, so our environmental consultants identified
12 potential concerns in a report directed to the
13 panel.

14 Water use and waste water treat-
15 ment have received considerable study in the past
16 year. Basically, we will need water for three
17 purposes: tunnel drill cooling and lubrication,
18 cement plants, and camp operation.

19 We need water for drilling at
20 both portals of the Rogers Pass tunnel, the
21 ventilation shaft and at the west portal of the
22 short tunnel.

23 We plan to pipe water from the
24 Beaver River at the east portal of the Rogers Pass
25 tunnel. Water for the west portal of the short
26 tunnel will come for Connaught Creek. A small
27 stream will supply water for the ventilation shaft,
28 and water for the west portal will come from the
29 Illecillewaet River.
30



1 (Fox)

2 After use, this water will be
3 treated in an oil separator and settling ponds
4 before being released into the Beaver or the
5 Illecillewaet or the small stream near the
6 ventilation shaft.

7 We have outlined a monitoring
8 and contingency system to ensure that the water
9 treatment system works as designed. This system is
10 described in the report submitted to these hearings.

11 Final proposed sites for settling
12 ponds were based on reactions of Parks Canada to our
13 report submitted to them in March, in which we
14 identified several possible sites at each location.

15 Another use of water will be for
16 the cement batch plant which we propose to locate
17 at Glacier. A full description of the plant, its
18 operation and pollution controls has been given in
19 the report submitted to these hearings.

20 Water will also be required for
21 camp operations. The water will be released after
22 treatment, into the source rivers.

23 The location of the ventilation
24 shaft was one of the most controversial topics at
25 the last hearings. At the hearings, I proposed an
26 alternative location for detailed investigation. A
27 further alternative site has been selected and approved
28 by Parks Canada. Access to the site has been
29 constructed and the site cleared for detailed
30



(Fox)

geotechnical investigations.

Air quality studies submitted separately verified the quality of tunnel emissions was acceptable and within the federal guidelines. A study of the noise associated with ventilation operations confirmed that the noise levels would not adversely affect the public in the park environment. Concern has been raised for the visibility of this structure, so we have conducted studies to see if and from where it would be visible to users of the park.

This study will be fully described in Calgary at the designated session by our visual assessment consultant. However, I would like to briefly summarize what we found.

We conducted experiments by tethering red balloons at the proposed locations and elevation of the tops of the vent stacks in the existing clearing. We found that only the top few feet of the two stacks could possibly be seen from various viewpoints.

The Rogers Pass surface route design was a process using all available techniques and mitigative measures to develop a realistic design that respects the integrity of existing environment and the highest engineering practice. During this process, CP Rail engineers worked in close collaboration with landscape architects and



(Fox)

reclamation specialists to develop optimum environmental and engineering solutions. The following were considered:

1) Geometrical: maximum horizontal curvature of six degrees, maximum grade of one percent compensated on curves at the rate of 0.04 percent per degree of curve.

2) Hydrological: adequate clearance and bridge design at stream crossings considering both anticipated river discharges and debris flows.

3) Geotechnical; slope stability, groundwater control and soil preparation, design of cut and fill slopes and retaining structures.

4) Environmental: minimal
visual impact and minimal overall terrain impact.

5) Construction: feasibility of completely balancing earth quantities within the park.

6) Existing Topography: steep slopes and some landslide areas.

7) Climatic Conditions: ground-water clearances and frost protection.

8) Schedules: coordination of activities.

9) Structural Adequacy: this will be a permanent facility.

Investigations for the design of



1 (Fox)

2 the surface route encompassed both engineering and
3 environmental studies. The hydrological aspects of
4 stream crossings were investigated in detail with
5 design considerations developed for both water and
6 debris flows.

7 Three landslide areas have been
8 identified and have been investigated. These include
9 the Griffith Landslide, an unnamed landslide, and
10 what is referred to as the wet slide area. These
11 will be discussed in detail in the Calgary technical
12 sessions.

13 Primary consideration was given to
14 designing the railway to meet railway standards.
15 However, within this constraint environmental
16 considerations had the most important influence on
17 selection of the proposed design and detailed route
18 location.

19 Despite the engineering constraints
20 to maintain structural and overall adequacy, the
21 alignment and design were modified to minimize the
22 visual impact of the completed railway. Environmental
23 considerations and potential impacts generally
24 decided the proposed design and location. Reclamation
25 procedures, balancing earth quantities and schedules
26 to meet environmental requirements were developed.

27 One major part of our work over
28 the past year has been reducing the visual impact
29 of this project to the minimum practicable by
30



1 (Fox)

2 combining engineering requirements with landslide
3 architecture and reclamation techniques. Our
4 results are shown on the side panels.

5 In order to fully appreciate
6 the potential visual implications of the new surface
7 route in the Beaver River Valley, we undertook what is
8 probably the most comprehensive visual impact
9 assessment ever done in Canada. We will fully describe
10 that procedure in the scheduled presentation in
11 Calgary on Saturday. However, I would like to
12 briefly outline the interactive process between
13 CP Rail and its consultants to minimize to as much
14 as possible the visibility of this track after our
15 reclamation is complete.

16 The first step was to develop a
17 complete inventory of all the visual fixed features
18 as seen by eastbound and westbound travellers on the
19 Trans Canada Highway. This provided us with some
20 interesting results. First, we realized that the
21 landscape is visually diverse and complex, so it has
22 a moderate to moderately high capability of
23 visually absorbing disturbances. We were also able
24 to identify those sections of the valley that were
25 the most visually sensitive from the perspective of
26 park visitors using the Trans Canada Highway.

27 The use of computer-aided
28 methods made it possible to develop five different
29 designs, each one a refinement of its predecessor.
30



(Fox)

The refinement process focussed on the visually sensitive areas and consisted of making adjustments to the alignment to reduce cuts and fills as well as locating numerous retaining walls and bridge structures. Parks Canada reviewed the fourth design in detail and gave us comments which we incorporated into the final design.

The result of this process was a significant reduction in the potential for adverse visual impacts.

In summary, then, the alignment that we present to you is the most refined of all the designs and is our best possible effort to protect the visual integrity of Glacier National Park, while meeting the engineering requirements of a high capacity rail line.

With the input from the visual impact assessment, the environmental studies and the engineering studies, we have also prepared a plan for the reclamation of the cuts and fills along the surface route at the Beaver River Valley. The reclamation program has been integrated with the engineering plans to provide the very best program possible. It has been designed to provide for the rapid revegetations of exposed slopes, as well as for the establishment of a permanent cover of trees and shrubs native to Glacier National Park.

We will be taking special



1 (Fox)

2 measures to ensure that erosion is controlled and
3 that reclamation is conducted as quickly as possible.
4 Our consultant has been conducting a number of
5 reclamation trials and tests in the Beaver River
6 Valley, and we are confident that he has developed
7 procedures that will permit us to effectively reclaim
8 the disturbed areas.

9 I will not go further into the
10 details of the program now, as we will be presenting
11 these on Saturday in Calgary. However, I would like
12 to point out that we are committed to providing the
13 best possible reclamation of the disturbed areas. It
14 is this commitment to excellence throughout the
15 whole job that allows me to assure you that the
16 landscape will be reclaimed to a state that respects
17 the goals of Glacier National Park.

18 The right-of-way required was
19 determined from the slope stake information along the
20 proposed design. The right-of-way was established
21 by locating it a minimum of 30 feet away from the
22 slope stake limit. Clearing will extend to ten feet
23 outside the slope stake limit. One hundred and fifty-
24 eight acres will be cleared inside the park. In
25 total, we require some 316 acres of property from
26 Glacier National Park.

27 In response to the concern that
28 downstream aquatic environments could be affected
29 by surface runoff during and after construction, we
30



1 (Fox)

2 conducted a study in 1982 to establish monitoring
3 criteria. The results of that study are presented
4 in our report submitted to the panel, and I will not
5 elaborate on them at this point. This study will be
6 discussed in the Calgary technical session.

7 The surface route construction
8 and reclamation will take place during the summers of
9 1984 and 1985, except for the elevated deck structure,
10 which will be installed in the summer of 1986.
11 Having said that, I hope the crow rate is fixed.

12 All other construction will
13 begin in the spring of 1984, with scheduled completion
14 in November of 1988. CP Rail has developed and
15 separately submitted construction procedures for the
16 surface route.

17 We have gone into some detail in
18 the report on the procedures for handling toxic or
19 hazardous substances. However, I will simply state
20 here that we will specify in our contract documents
21 that all contractors must meet federal guidelines
22 for storage, handling and transportation of all
23 fuels and other chemicals. Contingency measures must
24 be put in place to avoid any negative environmental
25 effects in the event of accidents. The environmental
26 coordinator will have the authority to ensure that
27 standards are maintained.

28 During the operation of the
29 railway, CP Rail. has strictly enforced procedures
30



1 (Fox)

2 that are followed when dangerous commodities are
3 transported anywhere on the rail network.

4 Passenger train speed on the
5 new main line will be 30 miles per hour maximum.
6 Heavy bulk commodity trains will generally be
7 travelling at approximately 15 miles per hour. At
8 this speed, a derailed car will probably remain on
9 the grade, thus maximizing the probability of a toxic
10 spill.

11 Having said that, the question of
12 toxic spills from derailments has been the subject
13 of intensive investigation, particularly by the
14 Canadian Transport Commission at hearings that lasted
15 well over a year, and from that hearing has come
16 very extensive and intensive regulations as to how
17 you do things and what you do, and those are what
18 the railway follows.

19 Electric power for the
20 ventilation system and tunnel lighting will be brought
21 in from Revelstoke on a 34.5 kv transmission line.
22 The power circuit will be run along CP's right-of-
23 way in an underground trench within the confines
24 of the National Park. The buried cable trenches
25 will be located in the ditch within the CP Rail
26 right-of-way.

27 Concerns passed that the second
28 track may result in more moose collision deaths of
29 moose caused us to do a detailed study of moose
30



(Fox)

movements this past winter. In brief, we found that there may be less than ten moose in the Beaver Valley in Glacier National Park and if there is a potential problem, it is likely to occur primarily at Mountain Creek. However, the conclusive evidence indicates that the major threat to moose is from the highway, not from the railway. Our consultant has proposed mitigative measures which we hope Parks Canada, who are responsible for managing the moose in the park, will consider.

Work Forces. CP Rail requested permission to construct work camps at Flat Creek and at the Beaver Valley gravel pit, both of which are two previously disturbed sites. Concerns were expressed that the camps at these sites would have detrimental effects on caribou and grizzly bears. We prepared a detailed report on the subject.

Basically our biologist concluded that the Flat Creek camp could have a minimal effect on the small caribou population. However, they did indicate that unless very strict management is followed through, bears could be a problem. We have taken their advice into consideration in our design and have asked Dr. Stephen Herrero to provide us with advice on bear management considerations. Dr. Herrero will attend the session on Friday night in Calgary. Despite general agreement from Parks Canada on the conclusions of that report, they have



1 (Fox)

2 recently advised us they will oppose campsites within
3 the park. We have investigated camps outside the
4 park, as well as alternatives within the park.

5 We have indicated in the report
6 submitted to this hearing that the prohibitive costs
7 of locating outside the park are not justified for
8 the reasons given by Parks Canada. For economic
9 reasons, therefore, we request that the camps be
10 approved in the park as originally agreed to by
11 Parks Canada in their statement to this panel last
12 year. Details on the camps will be discussed in the
13 session Friday evening in Calgary.

14 In addition to the studies carried
15 out in response to the panel's requests, we have
16 also undertaken several studies to answer questions
17 raised by Parks Canada at or since the hearings last
18 April.

19 At the hearings, we were asked
20 to see if there were any raptor nests along the
21 right-of-way and to determine if the elk seen by
22 Canadian Wildlife Service personnel were still at
23 Stony Creek. These studies were requested prior to
24 clearing the surface route or building the access
25 road at Stony Creek. In surveys conducted
26 immediately after the hearings, no raptor nests were
27 found on or near the route and it appeared that the
28 elk had left some time before the survey. With that
29 information, Parks gave us permission to build the
30



1 (Fox)

2 access road, and I might add we got that permission
3 after we signed a mutually acceptable agreement.

4 Prior to clearing the access
5 road, biologists conducted vegetation and wildlife
6 surveys. These are summarized in the report tabled
7 for these hearings. The vegetation information
8 will be used as a catalogue for the reclamation
9 plan to ensure that continuity with the surrounding
10 vegetation is eventually achieved.

11 The Fearo Panel concluded last
12 June that a committee concentrating on
13 environmental issues was required. An environmental
14 coordinator was also specified and one has been
15 employed since shortly after the Fearo hearings.

16 The committee structures in
17 place are as follows:

18 A steering committee is
19 responsible to sanction all plans, ensure that all
20 items are dealt with in a timely manner and act as
21 an arbitrator.

22 An Environmental Committee ensures
23 that conditions established by the Fearo Panel are
24 carried out and approves environmental aspects of
25 plans.

26 Design Committee reviews design
27 before and during construction to ensure that it is
28 environmentally acceptable.

29 The Implementation Committee deals
30



1 (Fox)

2 with problems that may arise, serves as a formal
3 communication medium for its members, solves day-
4 to-day problems and seeks guidance from the Environ-
5 mental Committee.

6 It is proposed to maintain the
7 above committee structures for the construction
8 project.

9 The role of the environmental
10 coordinator is to serve as the day-to-day contact
11 for park wardens and other inspectors and ensure
12 that construction operations are carried out by the
13 contractors using good environmental practices and in
14 accordance with agreements reached by the committee.

15 A complete monitoring program has
16 been developed for tunnel effluent, sewage treatment,
17 visual considerations, reclamation and work camp
18 monitoring.

19 CP Rail has demonstrated its
20 interest in environmental protection by producing a
21 number of exhaustive studies in response to
22 concerns of Fearo and Parks Canada.

23 State-of-the-art technology was
24 used to allow environmental planners, reclamation
25 specialists and engineers to work in an interactive
26 way to produce a design that will minimize terrain
27 and visual impact.

28 This dedication to the various
29 mitigation measures outlined in this report
30



Revelstoke)

(Leeson)

1 THE CHAIRMAN: Thank you.
2 Ladies and gentlemen, what we will do now is proceed
3 now to a presentation by Parks Canada and then
4 have the slide presentation, So Doctor Leeson, if
5 you would like to come up and make your slide
6 presentation.

7 DOCTOR BRUCE LEESON (Parks Canada,
8 Western Division):

9 Mr. Chairman, Panel Members,
10 Ladies and Gentlemen: I am Bruce Leeson from Parks
11 Canada's Regional Office in Calgary. I am
12 accompanied tonight by Mr. Gallagher, who is the
13 superintendent of Mount Revelstoke & Glacier Park
14 and his headquarters are here in Revelstoke.

15 Since the Panel first convened
16 in April of 1982 to consider C.P. Rail's Rogers
17 Pass Proposal a great deal of further research and
18 design has been conducted or commissioned by
19 C. P. Rail. Parks Canada has participated
20 extensively in the review of reports and design
21 plans produced by those efforts. C. P. Rail and
22 their consultants have been cooperative in
23 reacting to Parks Canada's comments and opinions.

24 Our May 11th 1983 review of C.P.
25 Rail's 1983 submission noted a number of deficiencies
26 which require an updated comment at this time
27 A June 2, 1983 meeting with C. P. Rail and our
28 receipt of C.P. Rail's Red Book, which is available
29 tonight, have been influential in formulating the
30 following points:



(Leeson)

1) C. P. Rail's commitment
to achieve environmental protection:

"to at least the standards
recommended by the consultants"
which is from Page 104 from the Red Book,

"is a very important condition
of approval to proceed."

Parks Canada requests the Panel
to be precise and explicit in applying this
covenant to any construction approvals;

2) Parks Canada is opposed
to the located of the work camps in Glacier National
Park particularly since those camps have increased
from two 250-man camps to a 420 and 460-man camp each.
Parks Canada requests the Panel not to approve
this proposal and that C. P. Rail be required to
locate their camps outside of Glacier National
Park.

3) The extent of terrain
disturbance is a continuing point of concern.
As indicated in our May 11, 1983 Report, Parks
Canada has reached the limit of our ability to
evaluate further the technical potential to reduce
the size of fills with alternate construction
methods. We note that Mr. Herwoods in his
written review requests specific information regarding

"alternatives considered to
reduce the right of way with
requirements at the locations of

(Leeson)

major cuts and fills".

Parks Canada requests the Panel to be diligent in ensuring the very best is being proposed and will be done to minimize terrain impact.

4) Parks Canada is satisfied that C.P. Rail has selected the best tunnel vent location. We are also prospective that the physical, visual appearance and auditory impact of that facility has been minimized to an acceptable level.

5) Reclamation will be the most important mitigation effort available to overcome the impact of unavoidable disturbance. C. P. Rail and their consultant - Norcal Environmental Consultants Limited, have responded to Parks Canada's earlier criticisms of a too general approach with a substantially more detailed presentation in the Red Book. This is an encouraging reaction. Reclamation must be an integrated aspect of virtually every phase and activity pre, during and post construction. The success or failure of the perceived commitment and accomplishment to protect and restore the environment of Glacier National Park will be evaluated by most observers on the rehabilitation accomplishments.

I cannot over emphasize the importance which Parks Canada places on this subject and I alert the proponent of the determination and diligence Parks Canada will exercise in seeking satisfactory reclamation of disturbed environments.



(Leeson)

Parks Canada requests C. P. Rail's reaffirmation and description of their reclamation commitment before this Panel, and Mr. Fox has already referred to that in his earlier presentation, and we request this Panel's application of that commitment as an unequivocal condition of project approval. Stability of disturbed slopes is a concern. However, there is sloace in the fact that slope stability is of paramount importance to the integrity of the new rail line. Accordingly, C. P. Rail can be expected to be overly cautious in ensuring stability.

6) The extent of off right-of-way drainage required to achieve this is of concern to Parks Canada. The proponent must not expect that elaborate impromptu drainage schemes will be permitted if environmental damage is threatened.

7) C. P. Rail is engaged in an evaluation of avalanche hazards at the Ross Peak site, that is west of the main tunnel. It is anticipated that operating procedures which safeguard public and worker's safety will subsequently be formulated.

8) Parks Canada confirms and endorses C. P. Rail's plan to bury the electric power cable along their rail line within Glacier National Park and in the new tunnel.

9) Parks Canada is concerned with the amount of dyking proposed for Mountain Creek



(Leeson)

1
2
3 and requests an explanation of alternative methods
4 of bridge protection;

5 10) Air quality, particularly
6 visual, in the vicinity of the vent structure
7 continues as a concern. Parks Canada endorses,
8 in principal, advice provided by the atmospheric
9 environment service that an air quality monitoring
10 program begin in 1983 or as soon as is practical.
11 Parks Canada also requests the provision that
12 C. P. Rail be required to ameliorate against
13 specified air quality deterioration if monitoring
14 should reveal that situation to develop.

15 11) Parks Canada reaffirms that
16 burrough areas cannot be developed in Glacier
17 National Park. Limited space to dispose of waste
18 materials is available. Disposal in excess of
19 that capacity must be outside the Park. C.P Rail's
20 plans to treat tunnel-boring waste water are
21 endorsed. We note that construction material storage
22 will be at Rogers, outside the Park, or on the
23 right-of-way. Construction scheduling will be
24 important as work space is limited and loss of
25 top dressing materials as a result of contamination
26 or multiple handling must be avoided. Hopefully
27 the removal of timber resources will proceed more
28 efficiently than in 1982.
29
30



1 12) C.P. Rail's plans for
2 landscape architects and a reclamation inspector
3 referred to on pages 105 and 106 of the Red Book
4 are applauded.

5 The foregoing presents Parks
6 Canada's opinions and concerns for the Panel's
7 and the proponent's consideration:

8 Parks Canada concludes that
9 Glacier National Park will be significantly damaged
10 by the proposal. The major impacts have been
11 identified and commitments to mitigate against
12 their effects are proposed. Cautious construction
13 procedures and disturbed land reclamation offer
14 the best hope to overcome the unavoidable impacts.

15 Parks Canada recommends the
16 project be approved, in principal, but only subject
17 to C.P. Rail's unavoidable commitment to utilize
18 state of the art environmental protection.

19 Mr. Chairman those are our
20 highlight concerns. Mr. Gallagher and I will be
21 attending the remainder of the sessions, and at that
22 time we expect to participate in detailed technical
23 discussions, and, of course, we will be here for
24 the rest of the evening to respond to any concerns
25 that might have been precipitated by this paper.
26 Thank you.

27 THE CHAIRMAN: I expect there
28 will be some questions on both your presentation
29 and C.P.'s. Perhaps now, however, we might
30



1 proceed to the slide presentation and if we could
2 have Mr. McKnight make that. I think we may have
3 to turn down the lights, and if you want to give
4 the appropriate instructions, Mr. McKnight.

5
6 MR. MIKE MCKNIGHT, (Parks
7 Canada Environmental Coordinator): Mr. Chairman,
8 Members of the Panel, Ladies and Gentlemen. My
9 name is Mike McKnight. I am the environmental
10 coordinator for the C.P. project. I am employed
11 by Parks Canada and my expenses and other costs
12 are defrayed through C.P. through a cost-sharing
13 agreement. I have been on the project since the
14 inception, and I was asked to make a brief
15 presentation this evening and try to give you an
16 idea of some of the things we have been through
17 in the last year and some of the areas where we
18 have succeeded and some of the things that we
19 tried and did not work too well.

20
21 I have a text but I plan
22 basically to speak off the cuff, if you like, and
23 I will be generally following the text but I will
24 not be reading it verbatim.

25 In the early 1970's C.P. Rail
26 identified four key areas where grades in excess
27 of one per cent were going to severely limit
28 their capacity to haul freight, primarily to the
29 west. In the fall of 1981, after constructing
30 three of say easier areas at Lake Louise, Revelstoke



PM-8-B

(McKnight)

1 Salmon Arm, they applied to the Canadian Transport
2 Commission to build the Rogers Pass section.

3 The Rogers Pass section primarily
4 falls within Glacier National Park and the align-
5 ment is from Rogers, which is located off the
6 photograph on the east end and basically follows
7 the line you can see. If you can see that line
8 on there, it is the existing rail line. The new
9 line will travel below that at a one per cent
10 grade. The original line is in the neighbourhood
11 of two or a greater per cent. It follows along
12 the valley just above the valley bottom in most
13 places. It travels off in behind the ridge here
14 that you can see on the photograph and eventually
15 through the tunnel under Mount McDonald.

16 So we have the one per cent
17 alignment running to Stony Creek. It will cross
18 under the Trans Canada Highway in the short tunnel,
19 and then basically enter the long tunnel.

20 In February of 1982 the
21 Ministry of Environment appointed the Panel you see
22 here to review the work that could go on in 1982.
23 The project was recognized as being nationally
24 significant and the Panel was requested to identify
25 the work that could take place in 1982 and also to
26 identify what further information would be
27 required in order that a very high level of
28 environmental protection be achieved.
29
30



PM-9-B

(McKnight)

1 The work that was approved
2 for 1982 was the construction of the tunnel
3 portals an access road along the surface route,
4 a further study on the ventilation system. They
5 approved a work camp for the Beaver Valley, and
6 recommended that an environmental committee be
7 established and the position I occupy as
8 Environmental Coordinator be staffed before
9 construction started. This was done.

11 Glacier National Park lies
12 in the Selkirk Mountains between Golden and
13 Revelstoke, and it is characterized by fairly
14 dense vegetation and relatively heavy precipitation.
15 The existing terrain in the Beaver Valley where
16 this route was to be built was largely very steep,
17 crossed very steep side hills. There are several
18 very flowing streams or fast falling streams, as
19 I call them -- if you stood them up another
20 couple of degrees they would be waterfalls, and
21 very sharp V-shaped gullies. A couple of known
22 landslides were crossed that had historic problems.

23 The initial problem that was
24 faced by the Environmental Committee and C.P. was
25 the entire business of what standard this access
26 road would be constructed to. The Environmental
27 Committee piked the access road in, or the center
28 line at that time, in some of the more difficult
29 locations and found the slopes were so severe that
30 it would be very difficult to construct an access



PM-10-B

(McKnight)

1 road to any kind of standard in those steep slopes
2 on the 50 foot or 15 meter right-of-way that the
3 Panel had recommended.
4

5 Parks Canada has had experience,
6 not so much in the construction business, but in
7 firefighting over the years. We have used cats
8 to build fire guards and often found that the
9 environmental damage caused by that sort of
10 practice is excessive, primarily because you are
11 not able to install proper drainage and install
12 proper back slopes. So that practice in the National
13 parks has been largely discontinued, and we no
14 longer use cats to any great extent, and what
15 we were faced with was a problem where we felt that
16 we could build a skid trail through this kind of
17 terrain, similar to what we would have called a
18 fire guard, but we were very concerned with the
19 stability of that; that it would not be a stable
20 structure. Thus, we were faced with the dilemma
21 of basically the first order of business for the
22 Environmental Committee would be to disregard, if
23 you like, what we felt was the primary recommendations
24 of the Panel.

25 We did a lot of soul searching,
26 a lot of discussion. We have an Environmental
27 Task Force, which Doctor Leeson heads, from
28 Environment Canada. We reviewed it with some of
29 their people and generally decided that we would
30 be better to go with a larger, a wider right-of-way



1 and ensure that proper back slopes were constructed,
2 that good ditching and culverts were installed to
3 ensure that we got the water off the right-of-way
4 and ended up with basically a more stable railway.

5 This is some of the terrain.
6 It is difficult without walking through there
7 to tell how steep it is.

8 Access became the next major
9 problem. The only established access, if you
10 like, was on the very east end of the project at
11 Rogers. There is a road that goes down there
12 and a substantial bridge. The bridge you see
13 here is the small wooden bridge that provides
14 access to our mountain creek campground, and the
15 only other access for heavy equipment was to be
16 hauled in on the train to the Griffiths Siding,
17 which is just above this area and unload it. We
18 started out with that procedure.

19 At the west end of the surface
20 area there was an old trail that ran into what
21 at one time was a D.P.W. construction site. It
22 was a very low standard trail and one of the
23 recommendations that the Panel urged was that we
24 allow access. It was felt that it would be
25 unreasonable to try to construct a project of this
26 side with access at one location, basically nine
27 miles to the far end.

28 We made a detailed field
29 inspection with the Environmental Committee. I went
30



PM-12-B

1 out and a couple of Park Wardens went out with the
2 C.P. Engineering people and we were able to locate
3 an acceptable alignment through the forest. It
4 was quite a narrow access road. We made the
5 best use we could of the existing terrain; tried
6 to minimize the cuts and fills for the access
7 trail, and additionally we made a very narrow --
8 this was to come back and haunt us a little further
9 down the road, because we succeeded at a high
10 level of environmental protection, but with a
11 16-foot top on the road, we had some close
12 encounters with loaded logging trucks and that was --
13 there are trade-offs in this business. You work
14 very hard towards one thing and you end up with a
15 situation where the safety was a concern.

16
17 The crossing of the creeks
18 became the next problem we had to resolve. The
19 access trail, the improvements, dead-ended at the
20 right-of-way at Stony Creek, and the prime
21 contractor had decided that he would handle the
22 job by breaking the line up into various sections
23 and sub-contracting those sections. As it turned
24 out, one of the contract boundaries was right at
25 Stony Creek. So one contractor was off to the
26 races; he had a nice access road right to his
27 piece of work; the other fellow ended up at the
28 edge of the creek and his piece of work was on the
29 other side of the creek. C.P. had, in their
30 contract documents, specifically forbidden any type



1 of crossing of creeks or streams with track
2 vehicles or rubber tired vehicles, and we certainly
3 supported that, and we had some discussions with
4 the contractors and we came up with the idea of
5 building a temporary bridge at these crossings.
6 They are basically just log sills on the ground,
7 and a very rough bridge made out of native materials
8 and held together by cables. This provided the
9 contractor with immediate access for tracked
10 equipment, four-wheel drives, and we were driving
11 across this type of a bridge. It also allowed
12 the bridge crews to have access to both sides
13 of the creek in order to construct the abutments.

14
15 No sooner had we solved that
16 problem that the next one reared its ugly head.
17 C.P. had requested or had included in their
18 contract documents that all of their construction
19 bridges, because they would have to carry loaded
20 scrapers and very heavy equipment, be certified
21 by a recognized engineer or a registered engineer.
22 This is the Stony Creek bridge you see here, and
23 the engineer -- the first plan that was submitted
24 was a 60-foot span, which was on the verge of
25 spanning the wedged perimeter but did not
26 completely span it, and the engineer had indicated
27 that in order to certify the bridge, he would want
28 to have extensive channel training. They wanted
29 to put a cat in the creek and basically dig the
30 creek out so that the flow of the stream would be



PM-14-B

1 definitely confined to the bridge crossing.

2 They also submitted two other
3 plans for longer spans that he would be happy to
4 accept or approve without the channel training.
5 Parks Canada approved both of those plans but were
6 reluctant to approve the 60-foot span because we
7 were not prepared to permit the channel training.

8 As you can probably imagine
9 when you start increasing the span of a bridge
10 like that the cost goes up rather quickly and in
11 this case the cost went up on a very high factor,
12 because in order to go beyond the 60-foot it
13 required a metal-framed bridge rather than built
14 out of log stringers.

15 So this issue was eventually
16 resolved that C.P. did an independent look at it.
17 They convinced us that basically the bridge
18 structure itself would be stable at the 60-foot
19 span, and we modified the plans for the west
20 abutment, which you see a machine sitting on here.
21 The wing on the abutment was angled back in this
22 area so it presented a much better angle of
23 approach to the creek, and some clean rock was
24 dumped on the edge of the wing to protect that
25 wing.

26 If you see those log stringers --
27 in order to get that kind of weight on that bridge,
28 those stringers were brought in from Squamish
29 on the coast, and they were so heavy that they were
30



PM-15-B

1 only permitted to haul two stringers on each
2 truck.

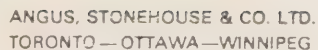
3 A couple of things that
4 came out of that: we reviewed their general
5 bridge plans and asked for some changes. Normally
6 those -- if I could just go back a couple of
7 slides -- okay, those are eight by eights that
8 go on top of the log stringers, and then normally
9 what they do is just put running planks across.
10 We asked that the entire bridge deck be enclosed
11 to avoid material dropping through it into the creek.
12 This is especially true if you are using scrapers
13 on a job, because as they move along they tend to
14 drop a lot of earth, and we wanted to make sure
15 that that material was not going to fall directly
16 into the creek.

17 In addition, these curb logs
18 on the edge of the span are normally set up
19 about one foot above the top of the deck, and we
20 requested that they set those curb logs right
21 down on the solid deck of the bridge, so that
22 you could run a grader or a loader across the
23 bridge and scrape that accumulation of earth
24 off the surface of the bridge without it falling
25 off into the creek.

26 An interesting thing in this
27 photograph: they had to install what they call
28 a needle beam under this bridge to increase its
29 capacity, and the fellow with the chain saw there
30

(McKnight)

1 is cutting off the end of the needle beam, and
2 they have hooked a choker on to it and up to the
3 back hoe, so that when he cut the end of the log
4 off it did not fall down into the creek. The
5 bridge crew did really an excellent job. They
6 were good people to work with and we were very
7 happy with them.
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Mountain Creek, which is one of the largest creeks in the area that had to be crossed, we were looking at a 120 foot clear span to get across this creek, and it was just beyond comprehension to build one of these temporary access bridges. So the big problem here was that in order to get access to both sides of the creek, they had to drive around about eight or nine miles, I guess, from out of the campground, around into Rogers and back along the access road. So the procedure here was a little bit different. Because we were using a steel span, the abutments were constructed approximately halfway up the finished height. This is the bridge steel you see here. I think it came in from Vancouver, if I remember correctly, and two about 50 ton cranes had to be used just to unload that span off the trucks.

That large blue tank you see there was a water tank that they had on site for fire fighting. They positioned it up on top of the bridge span and filled it full of water, and the cat that you see is a D-8, and it was hooked onto the back end of the bridge span.

The two cranes were driven around to the Rogers end and set up, and after much planning and deliberation, the D-8 cat started to push this



C-2

1 (McKnight)

2 bridge span out over the creek. The water tank, of
3 course, was being used as a counter-weight.

4 Once the bridge span had got out
5 to the point where it was on the balance point, the
6 cranes were able to hook onto it and gradually start
7 taking the load off the span. So as the cat continued
8 to push, the cranes were gradually able to pick up
9 their end of the span and move it across, and the
10 span was gradually lifted into place.

11 Access and timber removal on
12 the right-of-way became the next major problem. The
13 contractors that were preparing the access road
14 started work about the middle of July, around the 20th
15 of July, and the Stony Creek bridge, which provided
16 access to a large part of the right-of-way, was not
17 completed until September 1st, and we were getting into
18 such a problem in late August that CP came forward
19 with a proposal to utilize that old wooden bridge
20 into the Mountain Creek campground. We discussed it
21 with them, their engineering people had a look at
22 it, they put some reinforcing planking on the deck,
23 and we finally agreed that they would be able to
24 utilize that bridge for the removal of logs after our
25 public campground closed on September the 8th.

26 We were involved in, once again,
27 some very steep terrain and we found very little
28 opportunity to build what you would consider the
29 conventional log landing, where you could store any
30



C-3

1 (McKnight)

2 sort of volume of logs. There was only a couple of
3 locations where we were able to construct log
4 landings that were relatively level and in those
5 locations, we were maintaining the right-of-way back
6 to the original 50 feet that had been recommended by
7 the panel. In addition, we held that 50 feet at all
8 the major creek crossings, or at least as close as
9 we could to it.

10 THE CHAIRMAN: Maybe I should
11 mention at this point that we should have reached
12 the 20 minute mark and I think you may only be about
13 halfway through your slides. I am wondering whether
14 you could speed it up a little bit.

16 MR. McKNIGHT: Sure, you bet,
Phil.

18 Anyway, the big problem that was
19 faced was the timber on the right-of-way. As I said,
20 the contractors started early. They did not really
21 have any place to put the wood. A lot of the access
22 trail was so steep that it had to be built with
 backhoes rather than cats, as is normal.

24 So basically what we devised was
25 a scheme whereby we would maintain a narrow fringe
26 of trees on the bottom side of the right-of-way, and
27 the logs would be just pushed over the bank and decked
28 in large decks that were leaning up against the
29 standing timber that was left inside the right-of-way.

30 We really developed a Catch 22



C-4

1 (McKnight)

2 situation where we were not able to remove the logs.
3 We were not able to upgrade the road because the logs
4 were in the road, and we certainly had problems with
5 the contractor that worked for us, for Parks Canada
6 in removing the logs. Seeing that the area is still
7 part of the National Park, the logs remained the
8 property of the Crown and were disposed of through
9 Crown assets, so we had one contractor on one hand
10 working for us to remove the logs, the other contractor
11 was trying to build an access road. It basically
12 did not work out.

13
14 This is a rubber tired hill boom
15 that we eventually got in to remove some of the logs.
16 This is a track mounted hill boom, and as you can
17 see, the recovery of a lot of the timber was very
18 difficult.

19 General methods, once the road
20 was built, the backhoes were pulling a lot of the
21 debris back onto the road so it could be burned.
22 Then the back slopes were cut back and the culverts
23 installed.

24 We made an attempt to salvage
25 some topsoil. This occurred primarily at the east
26 portal of the long tunnel. We had a large work area
27 there in an old gravel pit where we could handle the
28 material, and we also encountered some substantial
29 depths of this topsoil material. It was basically
30 loaded into trucks, hauled out to the old pit and



C-5

1 (McKnight)

2 dumped, and a large cat was there to separate the
3 stumps and roots, limbs and that from the topsoil
4 material.

5 It was piled up and that pile of
6 stumps you see in burnables was set fire to this
7 fall. So we ended up with a substantial pile of
8 topsoil in this area.

9 The west portal was basically a
10 standard construction procedure on a well defined
11 site. We had a few problems with the fact that
12 they were working on both sides of the Trans Canada
13 Highway, and the fellows got a little complacent
14 about wandering back and forth across the highway.
15 We had some traffic problems, but generally it went
16 well.

17 An excavation, they poured a base
18 section, their reenforcing steel and then mobile or
19 portable forms for the tunnel box. We are starting
20 to backfill here. The highway is still in its
21 original location. There is the west end of the box
22 completed, looking into what will eventually be the
23 start of the tunnel. Here on the upper left, the
24 detour, and the excavation here is underneath the
25 highway surface or what was the highway surface.

26 It started to get into the late
27 fall and still working away. At the east portal, the
28 major construction there was what they call a
29 reinforced earth retaining wall, a one concrete
30



-C-6
1 (McKnight)

2 retaining wall, and an H pile and timber lagging
3 retaining wall that will be eventually buried in the
4 final construction.

5 The vent shaft location, as
6 discussed earlier, was quite a problem. Quite a number
7 of alternatives were looked at. All the alternatives
8 up until the final one, was investigated by
9 helicopter. We did not permit any access roads to
10 be built for the drill rigs. So the drill rigs were
11 all flown into the sites.

12 They are flying into the final
13 site that we had investigated here, and as you can
14 see, I think that chopper was flying on about an
15 80 foot line, and you can just bearly see the machine
16 over the tops of the trees as they were lowering
17 the material in.

18 In the late fall, CP came to us
19 and indicated that the site had been basically
20 successful, but they wanted to confirm the
21 geotechnical investigations and they needed to move
22 a larger rig in. So we did approve the
23 construction of an access road to the ventilation
24 shaft.

25 Here the cats are piling and
26 burning and doing the earth work. Some of the little
27 things that happened.

28 This was one of our first loads
29 of logs to come out over the new Stony Creek bridge.
30



(McKnight)

We were just doing fine. Whoops. I am a tremendous photographer. I stood there with my camera strapped around my neck and watched that truck roll over and never took a picture until everything had come to rest.

A track mounted drill rig was used to go outside the right-of-way at the Griffith and the unnamed slide. We walked through the entire area, picked out a very good trail, tried to make every provision that the machine would be able to make it through on a one trip basis. Unfortunately it got stuck right to the whatever, and it turned into a little more impact than we had originally considered.

Our poor bridge at Mountain Creek campground suffered a bit of a rough fate. They were hauling the machine out in the late fall and the trailer slid off the edge of the deck plank and that new deck planking that CP had generously put on there and wiped out the railing. That has since been replaced.

These are certainly not major problems, but it is the sort of thing that happens on a day-to-day basis and it has to be looked into and rectified.

The access road in general has stood up very well over the winter. We have had a few minor problems. Here there is a slump, a failure



C-8

1 (McKnight)

2 in the middle of the road. It unfortunately or
3 fortunately stopped before it got into the heavy
4 timber at the edge of the right-of-way. It has
5 managed to put quite a bit of pressure on the trees
6 below and you can see some of them are starting to
7 lean over severely. CP is presently having
8 contractors come out to look at this to rectify this
9 problem.

10
11 A number of tension cracks
12 developed in the road and luckily we have had a very
13 good spring, very little rainfall, and CP has been
14 able to get in there with their maintenance people
15 and basically fix these things up before we got any
16 amount of rain. We were concerned that we would have
17 major failures if it started to rain and the water
18 got into these tension cracks.

19 We did have one unfortunate
20 experience this spring in April. A piece of the
21 access road failed. It went down through the timber
22 and crossed the Trans Canada Highway, and unfortunately
23 there were two large semi-trailer trucks happened
24 along just at the time. One of them was pushed --
25 he got there just as the slide was coming down and
26 was pushed over the bank and ended up in the beaver
27 ponds at the bottom of the valley. The second one
28 was 5,000 gallons of wine and ended up laying on its
29 side in the middle of the Trans Canada Highway.

30 Once again, CP's maintenance



1 (McKnight)

2 crews got in there as quickly as they could. There
3 is a backhoe working here, just trying to
4 re-establish the drainage. What we feel happened
5 was that a piece of the fill on the other side of
6 the culvert there let go, slid down into the bottom
7 of the gully, and probably what happened was the
8 culvert continued to work quite well, kept pumping
9 water into it, and this mass eventually got
10 saturated and took off to the highway.

11 So, some erosion around some of
12 the major creeks. You can see where some of this
13 surface mud has flowed down and into the edge of the
14 creek.

15 That is it. Sorry for the extra
16 time.

17 THE CHAIRMAN: Thank you very
18 much for the presentation.

19 Before we stop for coffee break,
20 I will just provide a quick opportunity for any
21 questions. Maybe what we can do is put the panel
22 on hold for a minute and ask first of all
23 whether anybody has any questions of CP Rail as a
24 result of their presentation. Alternatively, whether
25 anybody has any questions of Parks Canada from their
26 presentation.

27 Panel, do you have any questions
28 you want to direct? George Tench.

29 MR. TENCH: Mr. Fox, you
30



C-10

1 mentioned the avalanche control at the west portal.
2 Could you give us some details of that so that we may
3 possibly get to the end of this and not have to come
4 back to it.

5 MR. FOX: Well, sure, I will do
6 as best I can, Mr. Tench. Do you want to know about
7 avalanche control as in operating a railway, or do
8 you want to know about avalanche control during
9 construction? Now, there is a difference.

10 MR. TENCH: Of the railroad.

11 MR. FOX: Of the roadroad
12 operating?

13 MR. TENCH: Yes.

14 MR. FOX: Okay. On the new
15 line, when it is built, we will only traverse one
16 slide area on the new second main line, and that is
17 the slide area at Ross Peak. Our present railroad
18 traverses that slide area and has done for the last
19 100 years.

20
21 Avalanches are controlled, and
22 I must say exceptionally well, through Glacier
23 National Park by means of mortar fire which is done
24 by the Army in conjunction with Parks Canada. We
25 are party to an agreement with those people such
26 that they will shoot any avalanches that affect our
27 rail line on a regular basis, in other words, as and
28 when required, determined by the experts in Parks
29 Canada.

30 We propose to continue that



C-11

1 process, and I might say, that is also tied in to
2 our train operations through our dispatcher in
3 Revelstoke here, and when we are on that type of
4 an alert, we always have our snow fighting equipment
5 standing by to remove any slides or anything like
6 that that may come down. When we are actually
7 shooting, let us say Ross Peak slide, train traffic
8 is stopped.

9 MR. TENCH: I understood that
10 the dispatcher was maybe located right there on a
11 sort of permanent basis. I could hardly visualize
12 this.

13 MR. FOX: No, no. The train
14 dispatcher is in Revelstoke.

15 MR. TENCH: So if there was a
16 sudden slide, what technique have you got of stopping
17 it?

18 MR. FOX: The technique is
19 this. Fred Slice, who is the expert for Parks Canada
20 in terms of when he is going to shoot these slides
21 down, he immediately gets in contact with our
22 dispatcher in Revelstoke, and he tells him what he
23 is going to do and when he is going to do it, and
24 then we stop our trains while he is in that process.

25 MR. TENCH: I am sorry to keep
26 belabouring the point, but if you got one that was
27 not anticipated ---
28

29 MR. FOX: One that came down and
30 hit the track?



C-12

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MR. TENCH: Yes.

MR. FOX: Well, if we were unfortunate enough to have a train in there, it would probably hit it. If it came down, it will probably take out our communication line, and we know we have got a problem, and we can get people out there to see what that problem is.

MR. TENCH: Thank you.

THE CHAIRMAN: Bill Ross.

DR. ROSS: I wonder, Bruce, if you would care to come up or at least I have some questions for you.

In your presentation, your point number 6, which deals with stability of disturbed slopes makes some reference to the off right-of-way drainage required to achieve the stability, and you indicate that Parks Canada will not permit elaborate impromptu drainage schemes. I wonder if you would elaborate on that point? I am not sure what you are getting at or what you mean. Do you have a particular example in mind?

DR. LEESON: Not specifically on this job. I can give you an example elsewhere associated with CP Rail and that is at Lake Louise, where we encountered a circumstance that for some reason was not anticipated and an elaborate drainage scheme off the right-of-way was required.

So what I am pointing out here is that we want sufficient research to be done so



C-13

1 that we know what we are getting into before a
2 certain course of action is embarked upon because
3 there may be a better alternative that would be chosen
4 in the first place.

5 DR. ROSS: Your point is that
6 you want the drainage schemes to be specified
7 beforehand and if they look sufficiently suspect
8 or objectionable to you, then you will inquire about
9 alternatives at that point?

10 DR. LEESON: Yes.

11 THE CHAIRMAN: Bill, are you
12 going on to a fresh one?

13 DR. ROSS: Yes.

14 THE CHAIRMAN: I wonder whether
15 CP Rail had anything that they might want to add on
16 that particular point at this time?

17 MR. FOX: Well, certainly there
18 are three basic areas that we will have to cross on
19 Rogers Pass, surface route, which will require
20 additional drainage upslope, and they are the three
21 slide areas. There will be rather extensive
22 underground drainage required in those areas.

23 Plans, we do have -- and
24 unfortunately there is not room here to put them
25 up, we do have posters on it which we can show you
26 when we get to Calgary. I will not say that is the
27 final design, but that is what it looks like right
28 now and we are still working our way through the
29 actual design, but in any event, Parks Canada will
30



C-14

1 certainly have an opportunity to look at those
2 before we proceed with them.

3 DR. ROSS: And we will as well
4 in Calgary?

5 MR. FOX: Well, you will not
6 see the final design, Dr. Ross, but you will see
7 what we propose at this time.

8 The consultants really have not
9 finished all their work in this vein yet.

10 DR. ROSS: Thank you. Dr.
11 Leeson, your point 10 about air quality makes
12 reference to advice provided by the Atmospheric
13 Environment Service regarding an air quality
14 monitoring program. Do you have any more details on
15 that? I do not think I have seen any documentation
16 dealing with that recommendation.

17 DR. LEESON: That is a
18 recommendation that was produced by the West Coast
19 Environmental Task Force, and this is a group of
20 in-service Department of Environment scientists who
21 advise Parks Canada regarding the adequacy of all of
22 the environmental documents produced by CP Rail's
23 consultants. With respect to air quality, they have
24 advised us that they think a responsible way to
25 proceed would be to establish a monitoring system at
26 this time, before any changes take place so that we
27 would know the pre-construction status quo.

28 That monitoring would continue
29 after the vent stack starts to operate, and if it
30



C-15

1 showed that there was a deterioration of air
2 quality beyond some agreed specified level, then we
3 would ask for some amelioration of that to be
4 implemented at that time.

5 Now, this specified level is
6 something that we do not at this point have numbers
7 to put forward, and Atmospheric Environment Service
8 pointed that out. They said there are no guidelines
9 for air quality management in wilderness areas in
10 Canada.

11 DR. ROSS: But what would be
12 involved in the monitoring program? Would that
13 involve primarily monitoring NOX, which I think was
14 the major pollutant of concern, at least at the
15 last hearings. What other aspects of air quality
16 would be involved in this monitoring program?

17 DR. LEESON: Mr. Faulkner, who
18 is the gentleman who has responded, was not specific
19 about that. I can give you a copy of his letter.
20 He simply says he recommends that we do air quality
21 monitoring in order to establish the status quo
22 and determine to what extent it changes, and also
23 that we ought to establish some standards that
24 we are working towards.

25 DR. ROSS: I wonder, Mr. Fox,
26 if you would care to comment on this matter,
27 especially with respect to the potential for
28 ameliorating any impacts which would be observed in
29 such a monitoring program? I wonder if you or
30



C-16 1 perhaps one of your consultants would care to
2 comment on that?

3 MR. FOX: Perhaps I can get
4 a clarification first. Where would they want us to
5 monitor what?

6 DR. LEESON: Where would be in
7 the vicinity of the Banff stack and perhaps a couple
8 of other selected places. Mr. Faulkner pointed out
9 that electric power was required to operate monitoring
10 machinery.

11 So perhaps at our compound area
12 and somewhere near the vent stack.

13 MR. FOX: This is after the vent
14 shaft has been built and in service or immediately
15 before and after? Is this what you are referring
16 to?

17 DR. LEESON: Both before and
18 after, Mr. Fox.

19 MR. FOX: How long before would
20 you want to monitor this?

21 DR. LEESON: If the machinery
22 always had to have electric power, it could not be
23 started until your power actually gets there.

24 MR. FOX: Well, the power is
25 going to be there up in that shaft I would guess about
26 1987, 1988.

27 DR. LEESON: If this machinery
28 that Mr. Faulkner is referring to cannot operate
29 without electric power, well then it could not be
30



C-17

1 started before then.

2 What he has suggested is that
3 we establish the circumstance as it exists before
4 the vent stack starts to operate so that we can
5 continue to operate ---

6 MR. FOX: You have got a
7 reference point.

8 DR. LEESON: Yes, and we
9 continue monitoring after it starts to operate and
10 see if there is any change that is of any special
11 concern.

12 MR. FOX: Well, I do not see
13 anything wrong with that, Dr. Leeson, but, you know,
14 it is something that we will not be able to do and
15 give you any results on until sometime late 1987-1988,
16 as I see it in terms of power to be available up that
17 shaft.

18 DR. LEESON: Yes, I did this
19 kind of monitoring at Lake Louise, and we had to have
20 electric power there to do it. It could not be done
21 remotely.

22 THE CHAIRMAN: I am sorry, do
23 you know if we are talking about in-stack monitoring
24 or you are monitoring at some certain distance away
25 from this particular installation, therefore, your
26 monitoring points would have to have hydro power and
27 they may be at some distance.

28 DR. LEESON: Mr. Faulkner points
29 out that his idea might not be acceptable to Parks
30



C-18

1 Canada because you would have to have power lines
2 and rights-of-ways to get to these monitoring sites.
3 So the whole thing is very conceptual at this point
4 and we would have to discuss it with him to see
5 just what it is he has got in mind.

6 MR. FOX: Yes, we could put
7 something down at your Parks complex there and run
8 whatever it is to be run down there, and so far as
9 the vent shaft, really, all that would be required
10 of the vent shaft, I guess, after you get power there,
11 is to run a series of emission tests at that location.
12 Perhaps you could start before we start running the
13 diesels through there so you get some sort of a
14 benchmark there. At the same time you could continue
15 to monitor them down at say your Parks complex, and
16 in between I do not know what the hell you would do.

17 DR. LEESON: I do not know either.

18 MR. FOX: Unless we get a
19 bicycle up there and we put Dr. Leeson on it and let
20 him pump it or something.

21 THE CHAIRMAN: Just one small
22 little detail. Is Parks proposing that CP pay for
23 this?
24

25 DR. LEESON: Yes.

26 THE CHAIRMAN: CP, you might have
27 some comment at this point.

28 MR. FOX: Well, I would reserve
29 comment on that, Mr. Chairman, until I know precisely
30 what is involved. I do not think it would be fair



C-19

1 on Dr. Leeson's part to say that we should
2 be expected to take up the cost either at this stage
3 until we know really what is required there and what
4 is involved.

5 If we can find that out, I think
6 maybe we can give you a decision.

7 THE CHAIRMAN: Are there any
8 questions from members of the audience at this time?
9 I know we have one from a panel member. George
10 Tench.

11 MR. TENCH: Dr. Leeson, in your
12 June 6 letter, point 3 you request consideration of
13 technical assistance, I think, just to sort of put
14 the thing in a nutshell. Have you done any thinking
15 about this yourselves and have you got any suggestions
16 as to what sort of help you would need, and when you
17 would need it, bearing in mind the timetable that is
18 in front of us now for getting this work ready for
19 tender call?

20 DR. LEESON: This is with respect
21 to terrain disturbance?

22 MR. TENCH: Yes.

23 DR. LEESON: Well, I think if
24 Mr. Herwood's request to provide
25 specific information regarding alternatives
26 considered to reduce the right-of-way width requirement
27 at location of major cuts and fills is responded to and if
28 the panel considers that CP Rail is convincing with
29 respect to they have done everything they can, then
30



C-20 1 we will be satisfied.

2 MR. TENCH: Looking at this
3 thing in a wider scale and looking at your own
4 input of the design, do you feel that you would
5 need assistance of a technical variety to help you?

6 DR. LEESON: Yes. Perhaps I am
7 not explaining myself very well here.

8 I am proposing that the panel
9 arrange for this to be done to their satisfaction,
10 that if Mr. Herwood's request for information is
11 responded to and the panel is satisfied that nothing
12 more can be done than what is being proposed, then
13 we also would be satisfied. We would not propose
14 to have a parallel investigation going on.

15 MR. TENCH: What I see, though,
16 is your continuing involvement in the Design
17 Committee, for example, where if you had at your right
18 arm some technical person who could sort of explain
19 things and interpret things for you that a lot of the
20 day-to-day decisions could be taken without coming
21 back to the panel, for example.

22 DR. LEESON: Yes, now I understand
23 what you are talking about, and we are going to
24 request that we do have technical assistance available
25 to us on an ongoing basis after the panel work is all
26 finished, because there are many things that we are
27 asked to evaluate and advise about that we simply are
28 unable to deal with.

29 MR. TENCH: Are you in a position
30



C-21

1 say by the end of the week to give us an indication
2 of what sort of help you would need and how long you
3 would need it?

4 DR. LEESON: We know the
5 subjects that we want help with. The intensity of
6 it and longevity of it I guess will simply be
7 related to when the detailed designs are provided to
8 us and decided upon, so probably a period of a couple
9 of years.

10 THE CHAIRMAN: If I could follow
11 up on this. The question of detailed designs, I
12 think I saw somewhere that CP Rail is quite anxious
13 to proceed to a tender and I think September was
14 the sort of dates I remember seeing. If you are
15 talking about going to tender in September, if you
16 are going to have those detailed designs and what
17 you have got now must be pretty darn close to being
18 detailed design work on the right-of-way?

19 MR. FOX: That is correct. Our
20 detailed design is pretty well finished as far as
21 the right-of-way is concerned.

22 THE CHAIRMAN: So if we are
23 talking about alternatives, those alternatives are
24 going to have to be thrashed out during these set
25 of meetings that we are going through right now,
26 specifically, we have this on the agenda for our
27 sessions in Calgary.

28 MR. FOX: That is correct.

29 THE CHAIRMAN: Bill Ross.

30



C-22

1 DR. ROSS: Moving along to
2 point 11, you make reference there to the removal
3 of timber resources compared to 1982. I am not
4 sure I understand the reason why you hope that the
5 removal of timber will proceed more efficiently.
6 Were there some problems in 1982 and were they
7 important enough that we ought to be dealing with
8 them?

9 DR. LEESON: There were problems
10 and they were difficulties of a very serious, day-
11 to-day nature, and Mr. McKnight, that is what he was
12 talking about when he said that the guy who was
13 supposed to remove the timber said he could not do
14 it until the road was improved and the guy who was
15 supposed to improve the road said he could not do it
16 until the timber was out of the way. So every day
17 we thrashed around with all this and finally ended
18 up only getting about half the timber removed and
19 being in everybody's way all summer. That procedure
20 just did not work out.

21
22 Mr. McKnight did not get a chance,
23 because he ran out of time, in his presentation, but
24 it is in his writeup where he describes the new
25 arrangement with CP Rail is that we are going to sell
26 them the timber, the Crown will receive its money for
27 all the timber on the basis of an independent
28 appraisal, then CP Rail can do with it whatever they
29 want.

30 DR. ROSS: That is suitable to



C-23

1 you and you think that will overcome these
2 difficulties?

3 DR. LEESON: Yes, that way it
4 is a turnkey operation.

5 DR. ROSS: Mr. Fox?

6 MR. FOX: Well, I am sick and
7 tired of hearing about the blasted timber. Really,
8 it is costing me one whale of a pile of additional
9 money because I had to work around all these piles,
10 and Parks Canada deal was, to fill you in on the
11 whole thing, we would cut and deck the timber along
12 the tote road, and the deal was that Parks Canada
13 would make their arrangements to take the timber off
14 the right-of-way and sell it to whoever they wanted
15 to sell it to and pocket the money.

16
17 Unfortunately the man they dealt
18 with was, I will say questionable in his intent to
19 do what he claimed he could do, and the result was
20 very little timber was taken off the right-of-way, and
21 what he did take he selected out of piles and strewed
22 piles around and we had to come in and do a lot of
23 additional work and our grading contractor had a
24 lot of additional difficulties in working around
25 these piles, which cost us extra money.

26 Now, in future, so far as I am
27 concerned the timber up there is worth one thing, and
28 that is put it in a pile and burn the damn stuff
29 because it is not worthwhile taking out and selling
30 it. So as far as I am concerned I am prepared to



C-24

1 pay what we pay the Crown in the Province of
2 British Columbia and stumpage costs and we will
3 burn the stuff, and that is all the timber is worth
4 there.

5 It is just a real headache for
6 anybody to try to play around with that blasted
7 timber. It is not worth it, not worth it at all.

8 THE CHAIRMAN: At this point
9 maybe we could take a short coffee break, coffee is
10 ready, and reconvene in ten minutes, and Mr.
11 McCrory, I believe, wants to make a presentation.

12 If there is anybody else who
13 wants to make a presentation, perhaps you could let
14 myself or the panel secretariat know during the
15 break. Thank you.
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1 ---UPON RECOMMENCING AT 9:00 P.M.

2 MR. WAYNE McCRORY:

3 Ladies and gentlemen, Members
4 of the Panel, and C.P. Rail:
5 My name is Wayne McCrory, and I am from New
6 Denver, B.C. I am a wildlife consultant and a
7 Director of the Valhalla Wilderness Society. As
8 I was raised in the Selkirks to the south of here
9 and worked two years on mountain goat studies
10 in Glacier Park, I have come to treasure it along
11 with thousands of other Canadians as one of our
12 monuments of wilderness and natural beauty preserved
13 for all generations. It is out of my own
14 personal appreciation of our grand Glacier Park
15 that I have come again before you to express my
16 concerns regarding the huge construction project
17 by C. P. Rail.

18 I would first like to commend
19 Mr. Fox, C.P. Rail and their consultants for having
20 done their environmental homework over the past
21 year. The list of documents on visual impact,
22 caribou, bears, noise pollution and other concerns
23 is impressive and most of the work appears well
24 done. I do regret the rush nature of the work
25 which gives us all so little time to digest and
26 analyse the impacts. Then, receiving C.P. Rail's
27 Environmental Impact Report only four days before
28 this hearing, does not exactly give one much time
29 to prepare one's case.
30



1 From an overall prospective
2 I do not oppose the necessity to expand the rail
3 system through our western mountains. However,
4 I do believe that where we violate the sanctity
5 of our national parks to achieve this, that there
6 should be some compensation to replace land areas
7 lost and impacted. I also believe that we should
8 not cut any costs to achieve as little environmental
9 impact as possible, and that such cost should not
10 be borne by Canada but by the consuming nations,
11 such as Japan, whose requirement of our raw
12 resources necessitates an expanded transportation
13 system. I believe these two principals, the one
14 of adequate compensation for the park areas lost
15 and the one of not cutting any cost to mitigate
16 environmental damage, must be inherent in this
17 megaproject.

18 I state these principals now
19 but will refer to them more specifically later. Also
20 from an overall prospective it is regrettable
21 that a thorough economic, social and environmental
22 assessment was not made to compare the Rogers Pass
23 twinning project with the rehabilitation of the
24 Kettle Valley Line to the south. If this had
25 been done, we would have had at least a chance
26 to consider an alternative route where the serious
27 negative impacts on our western mountain parks
28 might have been avoided.
29
30



M-2-D

1 I have endeavoured to review
2 the massive volume of technical reports on the
3 Rogers Pass project in the short time they have
4 been made available to the public. I was
5 impressed with the responsible manner in which
6 some of the environmental concerns have been
7 incorporated into the design and planning features
8 at some cost to C.P. Rail.

9 After reviewing the stack
10 of impact reports and their praiseworthy mitigation
11 promises, I was very struck by the accumulative
12 negative impacts that the C.P. Rail project will
13 have upon Glacier Park. For, even with
14 mitigation, we will still have 500-foot high scars
15 from large railroad cuts, increased mortality to
16 park wildlife, pollution and rechannelling of
17 streams, possible landslides, large vent stacks,
18 spewing plumes of exhaust and noise, disturbances
19 to grizzlies and other wildlife and other impacts.
20 To add to this, the park will be turned upside
21 down as an army of men and machines hack away at the
22 mountains. At every quarter of the park corridor
23 there will be construction. For four years the
24 park corridor will feel more like a construction
25 area than a national park, and forever after, with
26 the new impacts, will feel less like a preserved
27 national heritage and wilderness area.

28 I believe that the Park will
29 suffer more severe losses than C.P. Rail would have
30



PM-3-D

(McCrary)

1 us believe, and I thus hope that as much mitigation
2 as possible can be achieved to help soften this
3 blow.
4

5 Now I would like to express
6 some more specific comments and questions:

7 1) Last year I raised the
8 question as to whether there would be some form
9 of compensation to the national park system for
10 land areas lost and disturbed by the C.P. Rail
11 project. I ask again: will there be any
12 compensation, or will C.P. Rail obtain these
13 park lands for free?

14 2) Regarding the vent buildings
15 I am glad to see that they will be largely screened
16 from the highway. However, what is not addressed
17 is that the mountain slopes above are used by
18 hikers and wildlife and that these will be affected
19 by the visual disturbances as well as the smells
20 and noises. In other words, the recreational value
21 of the slopes and trails will be reduced by this
22 industrial vent complex. As well, I have noticed
23 smoke plumes at the east portal and I would like
24 to ask whether or not there will be smoke plumes
25 visible above the vent stacks?

26 3) Regarding the two
27 construction camps, I support Parks Canada's
28 position that these be located outside Glacier
29 Park. One of the reasons C.P. Rail gives for
30 wishing to locate these large camps within the Park



(McCrory)

1 is that there will be high costs for the extra
2 time to drive the men to and from work. Yet the
3 extra time is roughly equivalent to the two
4 coffee breaks per day that the company will pay
5 for.

6
7 In addition, I would like to
8 ask the Panel to independently review the so-called
9 additional costs. For example: at the west end,
10 the out-of-park alternative at Illecillewaet is
11 only six miles from the park alternative at Flat
12 Creek. Yet C.P. Rail claims it will take 17
13 minutes to drive this extra six miles, which means
14 a speed of 21 miles per hour. It would seem
15 that if C.P. Rail would let its crew buses travel
16 at 42 miles per hour, any extra cost due to the
17 distance travelled, would be eliminated.

18 I also believe that the camp
19 should be located outside the Park so that the
20 social infringements upon the legitimate park
21 users are minimized. These work camps - one for
22 420 men and the other for 460 men, are actually
23 small town sites or the equivalent of large Hilton
24 Hotels. C.P. Rail wishes to convince us that
25 they can manage such a large population of workers
26 in the Park so as not to infringe on the public
27 using the Park. I do not think it is realistic
28 for C.P. Rail to claim to restrict the activities
29 of this work force so as not to interfere with
30 Park users. From my experience in construction



M-5-D

(McCrory)

1 camps, the men work hard and play hard, and I do
2 not see how it is humanly possible to prevent
3 such things as beer parties in nearby campgrounds
4 or other infringements by construction crews on
5 litigate Park users.
6

7 Reasonable alternatives do
8 exist for the camps just outside the Park and I
9 think the concerns of the Park should come first
10 and not second, and that the camps should be
11 located outside of the Park.

12 4) My next concern has to
13 do with the construction camps and bears. The
14 well documented consultants report on bears and
15 caribou stated that:

16 "It is almost a certainty that
17 problems could arise at both
18 camps which could lead to human
19 injury or death and removal
20 of one or more bears."

21 The consultant recommended a bear-proof fence around
22 the entire camp as part of a multiple defence
23 system against bears, as both camps in the Park
24 will be located in black bear and grizzly habitats.
25 Yet C.P. Rail has decided against such a fence
26 claiming that they will only fence off the garbage,
27 loading dock and storage areas. They also claim
28 that the cost of the large fence is not warranted:

29 "given that no other facilities
30 in the park are fenced".



(McCrory)

1 As to this reasoning, I cannot
2 understand why they should feel they should be
3 given the same treatment as are the natural
4 park campgrounds and other facilities managed for
5 the public in the Park. After all, their camps
6 will have nearly 900 men, hardly comparable to
7 the smaller numbers who use the campgrounds and
8 other facilities.

9 I would like to ask C.P. Rail
10 if their option for partial fencing will be as
11 safe from a bear-human point of view as a fully
12 fenced camp. Have they considered the implications
13 of leaving the camp open to bears that will be
14 drawn to the inevitable food and odours that will
15 be there no matter what the policing? Have
16 they considered the implications of a grizzly
17 with cubs wandering in and going on a rampage
18 after being shocked by the electric fence at the
19 food storage area? Have they considered that
20 they will not be able to control all of the 900
21 men in the confinement of the camps and there will
22 inevitably be those wandering in or near the camps
23 where they could have an encounter with a bear?
24 These are only some of my concerns. I hope they
25 will be addressed.

26 In addition, I am concerned
27 that C.P. Rail did not review bear habitats at the
28 alternative camp areas outside the park or the
29 other alternative at Glacier in the Park. I believe
30



(McCrory)

1 the two sites in the Park are located in poor
2 quality bear habitats where bear problems are
3 less likely to incur. However, if camps are
4 located outside the Park, the same bear-proofing
5 and camp management should be applied to minimize
6 man-bear conflicts and maximize human safety.

7
8 5) Now to my last point:

9 As I have stated the impact studies and mitigation
10 plans by C. P. Rail are generally impressive
11 and worthy of commendation. However, the
12 question that needs to be asked is what kind of
13 corporate citizen has C. P. Rail has been in our
14 mountain national parks? Can we rely on their
15 claims to:

16 "respect the natural integrity
17 of Glacier National Park",
18 and their claims to a:

19 "commitment of environmental
20 protection".

21 A review of their environmental
22 track record in the mountain national parks over
23 the last decade leaves me with a very uneasy feeling
24 as to C.P. Rail's claimed responsibility towards
25 the environment of our national parks. Within
26 the parks numerous charges and some convictions
27 have been brought against C.P. Rail and its
28 associate, Canadian Pacific Hotels. Offences
29 include destruction of revegetated areas, blatant
30 garbage mismanagement and pollution park waters.



PM-8-D

1 (McCrorry)

2 The park files have numerous such complaints and
3 some convictions against Canadian Pacific which
4 indicate not isolated accidents and incidental
5 carelessness towards the environment, but rather
6 a blatant and irresponsible attitude. Let me
7 cite a few examples. Example A: C.P. Rail's
8 twinning in Banff and Yoho Parks in 1981. Huge
9 scars were left along the new railroad above
10 the highway. These scars are a national disgrace.
11 In addition, Yoho Park wardens documented a 50-man
12 C.P. Rail crew from the twinning project dumping
13 human waste, kitchen waste and creosoted rail ties
14 into Summit Lake. Garbage was thrown into the
15 woods and caused grizzly and black bear problems.
16 One C.P. employee was convicted but Parks Canada
17 refused to lay further charges.

18 Example B: In 1979 Canadian
19 Pacific Hotels at Lake Louise constantly ignored
20 Park Warden's warnings about leaving food and
21 garbage about. As a result there was nearly a
22 human injury from a grizzly and three grizzlies
23 and several black bears had to be shot. This
24 same C.P.R.-run park facility allowed, through
25 carelessness, a bunker oil spill into a creek in that
26 area.

27 Example C: In 1982 a C.P. Rail
28 employee was convicted in Yoho Park of driving
29 over and damaging a park area that had been
30



PM-9-D

(McCrory)

revegetated. This was after C.P. Rail had been warned about the matter.

These are only a few examples of C. P. Rail's lack of environmental responsibility in the past in our National parks. They do raise legitimate concerns as to whether C. P. Rail is capable of guaranteeing good environmental performance on the Rogers Pass project.

In light of this, I would like to recommend to the Panel that C. P. Rail be required to post a performance bond for the Rogers Pass project. Secondly, I would like to recommend to the Panel that the Project Environmental Committee, currently comprised of only Parks Canada and C.P. Rail, be expanded to include some members from the environmentally concerned public.

In closing, it is my sincere hope that the Rogers Pass project will see a turning point in C. P. Rail's environmental responsiblity, and that all of the impacts to our beautiful Glacier Park will be minimized as much as possible. Thank you.

THE CHAIRMAN: Thank you for the presentation. Perhaps you might want to stay around there just in case there is any questions that come to you, because I will be asking the Panel and C.P. and others if they have any points.

Before we start that though I



1-10-D

1
2 believe you have asked a question about compensation
3 and I will try to provide you with an answer on that.
4 I do not think I should go into it too deeply except
5 to say I understood that there are negotiations
6 on compensation between the C.P. and Parks, but
7 maybe Parks you could elaborate a little bit,
8 somebody from Parks on the question of compensation.
9 I understand there are negotiations involved.
10 Correct me if I'm wrong. ---

11 Okay, just for the record,
12 the reply was from Mr. Gallagher -- if you could
13 use the microphone in the future -- the reply was,
14 yes, there are negotiations going on but he is not
15 ready to give a definitive answer on that.
16

17 MR. FOX:

18 Mr. Chairman, I believe that
19 subject was brought up -- I cannot recall at which
20 particular stage of the hearing last year, and it
21 is in the proceedings of the Panel hearing what was
22 said at that time and if I am not mistaken, Mr.
23 McCrory, we were going to trade something like
24 let us say Lake Louise and Glacier National Park,
25 which would probably be of the order let us say
26 500 acres round figures for some 6,000 acres in
27 Cascade Valley. That sounds like a pretty good
28 deal to me.

29 MR. MCCRORY: That is not a
30 bad deal, Mr. Fox. Do you know how far along the



M-11-D

1
2 negotiations are?

3 MR. FOX: No, I am not
4 conducting the negotiations. They are in the
5 hands of our real estate people and our Regional
6 Vice-President. I am not really up to scratch,
7 although I do know they were asked by Parks
8 Canada people and our own Executive Vice-President
9 a year ago to let us say get off their butts and
10 get the thing cracking and I guess they are
11 progressing. That is about all I can say at this
12 time. I really do not know.

13 THE CHAIRMAN: Are there
14 any questions from Panel from Mr. McCrory on his
15 presentation?

16 DR. ROSS: I wonder, Mr.
17 McCrory, you indicated that you had some concern
18 about the work camps being in the Park and gave
19 some particular reasons. Are you convinced that
20 the Park resources would be better dealt with with
21 the work camps being outside of the Park? I am
22 asking you this and I probably will not ask C.P.
23 this tonight because I believe we are going to have
24 a shot at this in Calgary, but if you are not going
25 to be there I would like to get your response right
26 now.

27 What I am concerned about is
28 the potential for the work camps being outside of
29 the Park and there being an equal or nearly as great
30 an impact on the Park resources, bears and others,



M-12-D

1
2 by those work camps even though they are not in the
3 Park, and I wonder if you can convince me why the
4 impact on Park resources will be much less?

5 MR. McCRORY: As I stated, Dr.
6 Ross, I have reason to believe, but I do not have
7 the documentation to back it up -- it is just my
8 own observation from working with grizzly bears
9 and bear habitat, and my familiarity with the
10 areas mentioned in Glacier Park, that the alternatives
11 for camps outside the Park are in lower quantity
12 bear habitat, and, therefore, there will be fewer
13 bear problems for one thing. I think the fact
14 that camps will be closer to Revelstoke and Golden
15 will mean that workers will probably be more
16 inclined to go there to recreate or down to Elber
17 Canyon to the hot springs than to go into the Park.

18 DR. ROSS: That makes the
19 assumption that the work camps will be designed
20 to the same quality, in terms of protection against
21 bear problems, and makes the assumption that the
22 workers will have their own transportation from the
23 camps, which, I believe, is not the case if they
24 are to be within the Park. That is correct, is it,
25 Mr. Fox?

26 MR. FOX: We do not propose to
27 allow any private automobile parking at any of the
28 camps within the confines of the Glacier National
29 Park.
30



13-D

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2 THE CHAIRMAN: Just on that
3 point, I believe there was sort of a footnote
4 in the Red Book which you submitted saying that
5 there was some question of negotiation with unions
6 on that issue. Could you clarify that for me
7 now?

8 MR. FOX: Well, certainly
9 the unions will have to be told that the workers
10 will have to park their cars in -- for instance,
11 let us say that Revelstoke is picked as one of
12 the parking areas. There will have to be a
13 designed parking lot allocated for those people to
14 go to and leave their cars, and there would
15 probably be some form of a watchman on there to
16 watch the cars during the time that the owners
17 are not there. Yes, that has to be told to the
18 unions, and then a bus service provided.

19 THE CHAIRMAN: Does anybody --
20 perhaps Parks or C.P. Rail have any questions of
21 Mr. McCrory now at this time?

22 MR. FOX: Just a couple, Mr.
23 McCrory, and I appreciate your concerns and insofar
24 as the camps are concerned if you would like to
25 learn perhaps a little more about them, it will
26 be dealt with in Calgary if you could make that
27 trip, and I believe Doctor Herrero will be there
28 and he will -- I am sure you are familiar with
29 Doctor Herrero; I think you worked for him a
30 number of times. He will be there to talk about



M-14-D

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2

some of the problems which we might expect.

3

4

What does bother me, Mr. McCrory,
is: are you a Parks employee?

5

6

MR. MCCRORY: No, I am a private
consultant.

7

8

MR. FOX: Then how would
you have access to Parks' records?

9

10

MR. MCCRORY: How would I have
access to Park records?

11

12

MR. FOX: Yes.

13

14

MR. MCCRORY: I guess for the
same reason that C. P. Rail might have access to
Park information.

15

16

MR. FOX: Well, we do not
have access to Parks' records, I can assure you.

17

18

MR. MCCRORY: Oh yeah!

19

20

21

22

MR. FOX: None whatsoever. If
we want anything we have to go through the proper
channels to get it. So you know what you are
saying here about what has happened at various
other places, and I presume you were not there --

23

24

MR. MCCRORY: Those incidents
are common knowledge.

25

26

MR. FOX: You were not there
when they happened, I take it?

27

28

29

30

MR. MCCRORY: No, I was not
there when they happened but I worked two years
in Yoho Park.



PM-15-D

1
2 MR. FOX: So this is really
3 hearsay on your part?

4 MR. McCRORY: I do not think
5 it is hearsay. I think the evidence is there.
6 They are public knowledge and they have been
7 documented by Parks Canada and the information has
8 been made public.

9 MR. FOX: In what respect
10 and how?

11 MR. McCRORY: It has been
12 made public through the media. The Lake Louise
13 incident was publicized in the newspapers and the
14 incident at Summit Lake and the Wilderness Groups
15 ended up laying charges themselves.

16 MR. FOX: And what happened
17 to the charges, Mr. McCrory?

18 MR. McCRORY: The charges were
19 not pursued by the crown prosecutor.

20 MR. FOX : I believe they were
21 dismissed were they not?

22 MR. McCRORY: Yes, but the
23 evidence was never brought to trial, Mr. Fox,
24 so that it could be reviewed and judged upon. The
25 evidence is there.

26 MR. FOX: It was dismissed
27 for lack of evidence, I believe, was the correct
28 terminology.

29 MR. McCRORY: Well, to my
30



1 —
2 knowledge the infractions were well documented.
3 There is photo documentation of what happened there.
4 I do not think it is something we need to get into.

5 THE CHAIRMAN: Perhaps I could
6 just discuss the issue of this particular project;
7 I would rather like to know from Parks whether
8 there have been any problems during this current
9 phase of construction that has taken place, because
10 that was an issue during the last set of meetings,
11 and I think that some of these concerns which
12 Mr. McCrory is bringing up were issues at the last
13 set of meetings. Have you had problems with
14 workers? Have you run into the sort of problems
15 in terms of the way C.P. is doing the work?
16 I did not hear anything during your presentation,
17 Mr. McKnight; maybe you can let us know now whether
18 given the present system, you are experiencing
19 problems; whether you are looking for some
20 improvements, and I guess also in terms of the
21 Committee structure, the question that has been
22 raised here: are you finding that with that
23 Committee structure you are able to deal with the
24 various problems that are coming up?

25 MR. MCKNIGHT: Those are
26 a lot of questions all rolled up into one.

27 On the social end of it, I do
28 not feel we experienced any major problems. We
29 did not have a work camp in the Park this year.
30 The majority of the workers stayed outside the Park.



1 The contractors chose for their own reasons not
2 to establish the Beaver Camp, and so it is very
3 difficult to comment on that, because we just
4 did not have a large work force in the Park.

5 I understand that the hotel
6 in the summit of Rogers Pass was utilized almost
7 to its capacity - whatever was available for
8 construction workers, and I am not aware of any
9 major social problems from that.

10
11 Next?

12 THE CHAIRMAN: Has the
13 Committee structure -- that was a little bit of
14 a deviation I will admit, whether you found --
15 there was a comment in here, including some
16 members of the environmentally concerned public
17 on the Environmental Committee, and I was looking
18 to users and the opportunity to raise the question of
19 whether you felt the Committee was really being
20 able to handle the problems as it is publicly or
21 presently constituted?

22 MR. McKNIGHT: I think that
23 any additions to the Committee would certainly
24 be welcomed. One of the things I was quite
25 surprised about, I felt that one of my major duties
26 would be to talk to people that were concerned
27 about the project -- site visits or whatever, and
28 I found I was not approached over the entire
29 summer, other than Parks Canada staff and people
30 like that.



-18-D

1
2 Yes, I think it would be
3 valuable to have somebody from the outside. I
4 feel sometimes Parks Canada tends -- we get a
5 little too close to it and we do not see all the
6 issues, and I would personally welcome any input
7 into the Committee.

8 THE CHAIRMAN: Okay, thank
9 you very much.

10 DR. ROSS: Could I follow
11 that up for a moment, Mike? One of the roles
12 of the Committee was to ensure the provision of
13 information to the public, and I wonder if either
14 through, or perhaps through Mr. Fox or Doctor Leeson,
15 what sort of information was provided to the public?
16 What tools were used? Let me stop at that -- what
17 information was provided to the public, because
18 it seems to me that that is the sort of thing that
19 you would expect -- you would expect to get responses
20 from the public if you provide them with information
21 about what is happening, and I do not know what
22 the Committee was doing along those lines. I think
23 that it may be linked to Mr. McCrory's suggestion
24 because I would guess that one of the reasons for
25 adding an environmental group member to the
26 Committee would be to allow the interested public;
27 the environmental groups in particular, to see what
28 was happening within that as well as making suggestions
29 to it. I assume that was part of the rationale.
30



1
2 MR. McKNIGHT: Mr. Gallagher,
3 would you like to speak to that seeing you are
4 Chairman of the Environmental Committee.

5 MR. GALLAGHER: We have had
6 some contact with the public. My contact has been
7 mostly by correspondence though, through the
8 National Parks and the National Provincial Parks
9 Association, Miss Tara Grant, and her concerns
10 were the matters of construction used to start
11 the project and I am sure that Mr. Paradine is
12 totally familiar with that correspondence, because
13 he did get copies of all of it.

14 DR. ROSS: Let me pursue
15 that just a little bit more. I promise to get
16 back to Mr. McCrory and not let him get away,
17 but while we are on this subject, one of the things
18 that one might have expected in terms of an
19 Environmental Committee would be a year later to
20 observe what had happened and evaluated it, especially
21 with respect to the environmental mitigation measures
22 that were used during the year, perhaps to provide
23 an annual report on the mitigation measures used
24 and to make this information available to the
25 public. I would have thought that might be something
26 that would have been undertaken and I do not know
27 anything about that. That certainly would have
28 been helpful. Have you done anything along those
29 lines?
30



PM-20-D

1 MR. GALLAGHER: No. The
2 only thing we have done though is we have a record
3 of all meetings and that could quite easily be
4 put together for the public.

5 THE CHAIRMAN: Okay, do you
6 want to get back to Mr. McCrory on something?

7 MR. ROSS: Yes, I do. One
8 of his queries to C.P., I would like to ask Mr.
9 McCrory, has something to do with C.P. Rail's
10 option for partial fencing will be as safe as a fully
11 fenced area in your view. You provide some
12 indications here that you suspect it may not be.
13 Do you have any particular evidence or something
14 to back up your suspicions for why these problems
15 will be the important ones or something to convince
16 me more that the partial fenced option is less
17 satisfactory than it should be?

18 MR. MCCRORY: I believe the
19 whole idea of bear-proofing the camps was to have
20 a system, a security system where not only did
21 you keep the bears out of the camps but you had
22 proper storage facilities and so on and a gatekeeper,
23 and by not having the fence around the camp, you
24 are removing sort of the main security for the
25 camp area and sort of allowing the bears access
26 to areas between the camp buildings and so on or
27 to the fences that will be around the food and
28 garbage compounds. I think with that large
29 number of men, I do not think it is going to be
30



PM-21-D

1 possible to control their roaming about or to
2 control lunch bags being thrown out the window
3 or food around. I just do not believe it is
4 humanly possible to achieve the control that C.P.
5 Rail would like to have us believe, and so it is
6 my opinion -- I guess it would be that the kind
7 of option that C.P. Rail has chosen would be
8 less safer than the more secure system with the
9 camp entirely fenced off, but that is only my
10 opinion.

11

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E-1
BN-bn

1 DR. ROSS: Thank you. I
2 indicated I will get back to CP on this matter.

3 One thing which I would like,
4 Mr. Fox, at some point, perhaps by Friday when we
5 get to Calgary is an indication on the maps of the
6 work camps where the fencing would actually go
7 because that is not quite clear to me and I do not
8 see it on those maps on the wall.

9 MR. FOX: There has been no
10 attempt to show the fencing on any of those diagrams
11 that you see, but they would have to be around the
12 perimeter road if you are going to fence the entire
13 complex.

14 DR. ROSS: No, but I am
15 interested in the two alternatives of either fencing
16 the entire complex, which I believe was in the
17 consultants' report, and the alternative which I
18 believe you put in this red document which I believe
19 is presenting a smaller component of it.

20 MR. FOX: We can do that for
21 you, Dr. Ross.

22 DR. ROSS: Thank you.

23 THE CHAIRMAN: I believe you had
24 a question you wanted to ask, Mr. Fox.

25 MR. FOX: It is not a question.
26 It was a remark. I believe it was Dr. Ross brought
27 up or perhaps you, Mr. Chairman, brought up about --
28 it was Mr. Chairman, brought up about problems that
29 we had with the workers this year in the park.
30



E-2

1 I would like to say this that
2 with the small amount of work and the small work
3 force that was underway, as Mr. McKnight indicated,
4 the contractor chose not to put a camp up and
5 of course this job was really of a rather short
6 duration. Rather, he opted to use local people where
7 he could get them, and I believe some of them drove
8 Golden and also Revelstoke, but nevertheless, there
9 were some 40 of them put up at the Glacier Park
10 Lodge I believe it is called.

11 I made some inquiries, not to
12 the hotel, but to the superintendent of the job and
13 asked him very bluntly did you have problems or did
14 the men cause problems in that environment. As you
15 will recall in Vancouver last year and also in
16 Revelstoke we had some rather disturbing things
17 said about what could happen and what did happen in
18 that establishment. Anyway, I have been assured
19 that there were no untoward instances that took place
20 whatsoever during the period that these people were
21 up in this hotel and I guess they were there for ---

22 MR. SOUL: Bull face lies.

23 MR. FOX: I am sorry?

24 MR. SOUL: Bull face lies.

25 THE CHAIRMAN: If you are going
26 to become involved in the discussion, could you
27 indicate, please, and then we can get you down on the
28 record, because otherwise it is not going to become
29 part of the record.
30



E-3

1 Mr. Fox, would you like to
2 finish your statement?

3 MR. FOX: Thank you very much,
4 Mr. Chairman. My understanding is from the
5 superintendent of the job that they did not have any
6 problems at this particular place.

7 Now, he did tell me that it was
8 necessary on occasion to talk to some of his people.
9 They looked sideways or whatever at girls they have
10 up there surveying, and he did tell me that he did
11 have that problem. He had to, as he put it, spank
12 a couple of them and talk rather severely to some
13 others. But beyond that, he indicated that there
14 were really no real problems that he could see
15 anyway.

16
17 THE CHAIRMAN: Did somebody
18 else want to comment on that particular presentation?
19 If you could identify yourself, please?

20 MR. JORGENSEN: My name is
21 Doug Jorgensen. I am a resident of Rogers Pass.

22 Referring to the construction
23 workers that stayed up there, if you take a
24 percentage of the people that were there, it was
25 fairly good, although there was a number of incidents
26 that left some of our staff visibly shaken.

27 The legitimate users of the park
28 do not usually treat people the way some of those
29 did. However, if Mr. McKnight would like someone
30 to volunteer for input on the social impact of this,



E-4

1 I would be more than happy to do that, and with the
2 camp that is going in you say that there is going to
3 be buses bringing the people in and there will be
4 no cars allowed. That means that Greyhound would
5 probably be an alternate route to leave that camp
6 if somebody so chose to do so, which means that
7 the hotel is a bus depot. I only hope that somebody
8 will be willing to come to our aid if that turns out
9 to be a major problem. I can see it happening.

10 MR. FOX: I am not sure that
11 I understand you. The deal that we propose is
12 that the workers, if the camps are inside the park, the
13 cars will be parked at some point outside the park
14 itself. In all probability a place like Revelstoke
15 and/or Golden. The men will then be bused from
16 the camp to those two points.

17 MR. JORGENSEN: On a daily basis?

18 MR. FOX: No, you will not have
19 to go on a daily basis. When they finish their
20 week's work or whatever their period of work is,
21 they will then be bused to wherever it is their
22 cars are or wherever it is they want to go in terms
23 of what they can get at either Golden or Revelstoke.
24 We certainly will not provide a bus service, I can
25 assure you, from our work camps to the Glacier Park
26 Lodge.

27 MR. JORGENSEN: No, but
28 Greyhound would be more than willing to do that.

29 MR. FOX: Well, I do not care
30



E-5

1 about Greyhound. I am just telling you what we
2 propose to do. If Greyhound wants to do something
3 else, they had better come and see us.

4 MR. JORGENSEN: No, Greyhound
5 travels that route regularly.

6 MR. FOX: I appreciate what they
7 do.

8 MR. JORGENSEN: And that is the
9 point I am getting to is that during that week that
10 they are there or for how many days they are there,
11 if they so chose to take in some other course of
12 entertainment and flood our establishment, it would
13 be nice to know that there would be somebody willing
14 to do something about it if there was a problem in
15 that area.

16 MR. FOX: I presume you are
17 connected with the lodge up there, are you?

18 MR. JORGENSEN: That is correct.

19 MR. FOX: You did not say.
20 What is your position?

21 MR. JORGENSEN: Assistant
22 Manager.

23
24 MR. FOX: You are the Assistant
25 Manager. Well, you know, after what I was told last
26 year in Vancouver about what the goings on were up
27 at that lodge on one occasion, I arranged to have
28 my Inspector of Police, Mr. Graham from Vancouver
29 look into this and he dealt with it with the RCMP
30 concern, not only in Revelstoke, but the head



E-6
1 detachment for the area, and we could not prove,
2 we could not come up, we could not find any scrap
3 of evidence to support what was said.

4 Now, right after all that was
5 said, your hotel, and I do not know who made the
6 decision, somebody made a decision to take these
7 workers in and board them at that hotel, obviously
8 for the one reason of making a dollar. It seems to
9 me that if you are running a public establishment
10 and you are selling liquor there that you have a
11 responsibility too, not only the railway, not only
12 the contractor. You, I think, have the prime
13 responsibility in my opinion.

14 MR. JORGENSEN: Well, that
15 sounds pretty good except that if you were to come
16 into our lounge at any one particular time, you would
17 not find very many of them in there drinking the
18 liquor that we offer for sale. Most of the liquor
19 that they consumed was liquor that they brought into
20 their rooms.

21 MR. FOX: Well, I do not know
22 how you control a thing like that. I wish I did know
23 and we would be able to control it perhaps in some
24 of our work gangs and our cars, but it is an
25 impossible thing to control, I can assure you.

26 MR. JORGENSEN: Well, we would
27 take your daughter's application and seriously
28 consider it if she wanted to work there. Maybe that
29 would help control it.
30



-7
1 MR. FOX: I am not getting into
2 that argument with you. What I am saying is
3 how do you control a man bringing liquor into his
4 room? It can come in in his laundry; it can come
5 in in his personal suitcase, and you, as an individual,
6 certainly cannot open those things, and I cannot.
7 So I am saying to you I do not know how you control
8 it.

9 MR. JORGENSEN: Okay, but there
10 is the park.

11 THE CHAIRMAN: If I could just
12 follow up on that. Are you saying that your camps
13 are supposed to be dry camps?

14 MR. FOX: We can call them dry
15 camps, we can put up all kinds of notices and they
16 still will bring liquor or beer into the rooms, Mr.
17 Chairman, and there is no way you can control that.

18 I just had a long talk today with
19 one of the largest contractors in B.C. about that
20 very thing, and he told me, he said, Mr. Fox, I do
21 not know how you control it. He says we have got
22 all kinds of camps that are supposedly dry, but he
23 says, we know damn well they have got beer and liquor
24 in there, but he says, how do you control it, and it
25 is an impossible thing to do. You cannot search
26 the individual, unfortunately.

27 THE CHAIRMAN: Well, I have had
28 some experience with oil rigs, and maybe it is a
29 different situation if you are 200 miles off the shore.
30



E-8
1 Are there any other questions
2 of Mr. McCrory? George Tench.

3 MR. TENCH: Mr. McCrory, you
4 mentioned here the possible alternate is to place
5 a camp six miles outside the park boundaries, getting
6 it out of the park. Do you think that if that did
7 happen, I would imagine the workers would have their
8 cars there, do you think the impact, the social
9 impact on the park and the park amenities would be
10 very much different by just moving these people that
11 far away and leaving them with transportation to get
12 into the park?
13

14 MR. MCCRORY: Well, perhaps the
15 same restrictions could apply there as inside the
16 park.

17 My other concern about the camps
18 in the park is, like I say, it is like having two
19 big Hilton Hotels at each end of the park, and I do
20 not think they belong in the park, and I do not think
21 you can control their social activities, and I do
22 not think the bear problems are going to be as
23 controlled as CP Rail and Parks Canada feel they might
24 be. So you know, it is a park, the park should come
25 first.

26 THE CHAIRMAN: Maybe I could ask
27 Parks Canada again, do they share this concern about
28 the activities of workers who might be at camps in
29 the park at areas outside those particular camps?

30 In other words, do you foresee



E-9

1 a problem with workers from the camps being in the
2 park and you not being able to control that
3 particular problem? Presumably if you have a
4 problem now with somebody in the park you ask them
5 to leave the park. With the camp being in the
6 park, presumably the best you can do is send them
7 back to their camp.

8 DR. LEESON: Well, to some degree
9 I think the problem will exist in the park, a worker
10 problem exist in the park whether the camp was
11 located in the park or outside, but probably a little
12 less outside simply because they are closer to urban
13 centers and would be more inclined to go to those
14 places to have fun.

15 THE CHAIRMAN: Well, you do not
16 perceive a problem in terms of them being able to
17 handle people that cause you a problem in the park,
18 whether they are inside or outside. If it is
19 not in a commercial establishment, you presumably
20 would ask them to leave?

21 DR. LEESON: Oh yes. It would
22 not make any difference where a troublemaker came
23 from.

24 THE CHAIRMAN: Are there any
25 other questions for Mr. McCrory or is there
26 anybody in the audience who would like to ask a
27 question.

28 If not, I would like to thank
29 Mr. McCrory for coming along and making his
30



E-10

1 presentation, and in particular, for taking the
2 trouble to go through the amount of material that
3 has been produced on this project to develop this
4 presentation. Thank you for coming along.

5 MR. McCRORY: Thank you for your
6 patience. There was just one question that was not
7 answered by Mr. Fox, and that was question number 2
8 regarding my observation that there are smoke plume
9 from the east portal or at least I have seen them,
10 and I am very glad that the vent stacks can be
11 screened by the trees, but will there be smoke
12 visible above those stacks, you know, and was
13 that considered or what is the score on that?

14 MR. FOX: Yes, it was considered
15 at great extent at the last hearing, I believe it
16 was at Calgary where this was brought up if I am not
17 mistaken on last year's panel, and the panel
18 expert indicated, as I recall, if you held up a piece
19 of white paper you would not see anything against it.
20 Now, I am quoting the panel expert, but the actual
21 evidence is in the proceedings.

22 It was looked at and has been
23 looked at again so far as this goes, and it will be
24 discussed in Calgary as well.

25 MR. McCRORY: I see. Thank you.

26 THE CHAIRMAN: If anybody else
27 would like to make a presentation, ask some questions,
28 members of the audience. Yes, a gentleman there,
29 would you like to come up and use the microphone,
30



1 identify yourself.

2 MR. ARMSTRONG: My name is
3 Richard Armstrong and I am a local resident here in
4 town.

5 I assume I will be working in
6 that CPR tunnel, and how will I get home to see my
7 family at night if I am working 35 miles out of town?
8 I would like to commute back and forth in my own
9 vehicle if I am going to see my family. I do not
10 think I want to be held hostage for five days in
11 the camp or 24 days, whatever the work schedule is
12 going to be, so how do you intend to go about that
13 problem?

14 MR. FOX: Well, I will answer
15 you this way and it will not be a very satisfactory
16 answer. I have asked the same question, if we have
17 local people working, how do they get back and
18 forth, and I guess there are some things in the union
19 contract that cover travel. I have been told by
20 the contractors that a work camp that far from home,
21 while you can drive it, you certainly would not drive
22 it in the wintertime, I do not think, you can drive
23 it but Parks Canada will not permit us to allow
24 cars in the park itself for whatever reason they want
25 to disallow it.

26
27 All I can do is go along with
28 their request, and that is basically my problem right
29 now. I would like very much to accommodate you, but
30 I do not see how I can.



-12

1 MR. ARMSTRONG: Well, I see by
2 your response if the camp is in the park. Mind you,
3 I live in Revelstoke, somebody else might live in
4 Malakwa or wherever it is. It might be commuting
5 70 miles daily, so double that, 140 miles. Lots of
6 people will be doing that for, shall we say, eight
7 months of the year anyway, and during the winter,
8 the camp being close to the Trans Canada Highway,
9 that Trans Canada Highway is open 99 per cent of the
10 time. There will be lots of people if they do not
11 commute daily, they might commute every other day,
12 pools or things like that, considering we will be
13 close to urban civilization.

14
15 I heard you mention you talked
16 to unions and this and that. I do not know how far
17 your discussions went, but let us take, for example,
18 the tunnels that are going on in Tundra Ridge right
19 now, Northeast Cole, where the work shifts are 24
20 on and eight off. I believe it would be extremely
21 difficult to attempt to cage working men in your camp,
22 whether it is in the park or six miles out of the
23 park, that people will want to have their own vehicles
24 and commute.

25 If you are 30 miles away or even
26 60 miles away from your family, I think it would be
27 a little difficult to keep the men there for 24
28 days.

29 MR. FOX: I am inclined to agree
30 with you. Now, you have to look, I think, at what



E-13

1 they had to accomplish in the Northeast Cole that
2 forced them to go to a 24 and whatever the days
3 off were, and what they were actually doing there
4 was working, I believe it was seven days a week,
5 three shifts a day, facing a very tight deadline.
6 We are fortunately not in that same situation,
7 although we do want to get it done as quickly as we
8 have to.

9
10 We will not have to go to a seven
11 day work week, working with the swing shifts and
12 everything else. What we hope to be able to do is
13 whatever the men more or less work to, in other
14 words, if you work a five day week or a six day week,
15 that is what we hope to be able to establish and work
16 it on that basis.

17 MR. ARMSTRONG: I see. Well, we
18 will see what happens anyway. But if it does go
19 something like 24 and eight or 12 and two, which
20 usually happens -- I do not know if it will happen
21 in this case -- they should keep in mind that lots
22 of people will not want to stay in that camp for
23 12 days considering we are so close to civilization.

24 Thank you very much.

25 THE CHAIRMAN: Are there any
26 other comments, questions from members of the
27 audience at this time? We have a little bit of
28 time left. We usually have some panel questions here.
29 Dr. Ross.

30 DR. ROSS: As long as we are



E-14

1 on the subject of community impact or a social
2 impact, I am wondering, perhaps Mr. McKnight or
3 perhaps Mr. Fox, what sort of monitoring went on
4 within the last year with respect to social impacts?
5 Were there any discussions with the RCMP; were there
6 any incidents related to the project in any manner
7 which were reported to the RCMP? Is there any
8 information on the number of incidents, that sort of
9 material?

10 MR. FOX: I do not know of any
11 myself. I do know that Mr. Gallagher had some
12 discussions with the RCMP concerning putting an
13 RCMP officer at the Pass when the heavy construction
14 part went on, and I must say that I think both of
15 us were somewhat disconcerted when we saw what went
16 on at the Glacier Park Lodge. Really, I think we
17 both -- and Mr. Gallagher can certainly speak for
18 himself, but I think we are more or less of the
19 common opinion that based on what went on last year,
20 there was no need for any concern.

21 Now, beyond that, I do not know
22 of any instance where police had to be called to
23 handle whatever situation arose. Now, perhaps Mr.
24 Gallagher knows more about it than I do, but to the
25 best of my knowledge, I do not know of anything.

26 DR. ROSS: If I understand your
27 response, there was no formal monitoring of this?
28 It is just a matter of whether you heard it or not,
29 is that correct?
30



-15
1 MR. FOX: There was no formal
2 monitoring on my part except through my supervisors.

3 DR. ROSS: Mr. Gallagher.

4 MR. GALLAGHER: Yes, thank you.
5 When I was made aware that there would be a camp
6 in the park at Beaver Creek, I negotiated with
7 Superintendent Collins, who is in charge of the
8 division and he is stationed in Kelowna, and he
9 assured me that he would have an RCMP officer in
10 the area, Thursday, Friday, Saturday and Sunday, that
11 is, located at the Pass, providing accommodation was
12 provided for the officer. We have a staff room at
13 the Pass, which is a three bedroom apartment.
14 Consequently, I made that available to the RCMP
15 officer.

16
17 I was quite surprised to hear
18 from Mr. Soul that they did have problems at the
19 hotel and I really do not know what prompted these
20 or initiated them, but as far as I was concerned, we
21 did have the RCMP there over the critical periods,
22 the long weekends.

23 DR. ROSS: The RCMP were here
24 every weekend during some period of time?

25 MR. GALLAGHER: Yes, during the
26 summer months. I think Mr. Soul can verify that.

27 MR. SOUL: There was one
28 particular incident where the RCMP officer in the
29 Pass was called and a worker for the tunnel project
30 was taken into custody and into Revelstoke. There



E-16

1 was another marijuana smoking incident inside the
2 hotel to which the RCMP reacted and they dealt with
3 the problem themselves. There was a motor vehicle
4 accident involving a tunnel worker on the Trans
5 Canada Highway, and there were a number of smaller
6 vehicle accidents as well as incidents of abuse of
7 park property by motor vehicles driven by tunnel
8 employees.

9 THE CHAIRMAN: Parks, you are
10 aware of these incidents? Is this something out
11 of the ordinary for your visitors?

12 MR. GALLAGHER: I was not made
13 aware of those incidents at all. As a matter of
14 fact, it is news to me and I did ask Mr. Soul why
15 he did not bring them to my attention and he said
16 he figured they were on their own.

17 DR. ROSS: I believe that one
18 of our recommendations in the interim report was that
19 community liaison action should begin immediately,
20 and I would have expected some more interaction
21 between the RCMP, the members of the public and so
22 on and the Environmental Committee responsible for
23 that. That is more what I was inquiring about the
24 monitoring program established by the committee.

25 Unless you have more comment on
26 that, Mr. Gallagher, my next comments are more
27 directed to CP, thank you.

28 I am not sure I understand the
29 issue of buses in workers to Revelstoke or to
30



E-17

1 Golden. I am not sure how frequently it happens,
2 how long the workers would be in Revelstoke, what
3 accommodation would they be likely to use, would it
4 be overnight, just for the day, would it be for
5 several days. I think you mentioned that you would
6 create a specific area to store vehicles. If we
7 are dealing with some 800 workers, then vehicle
8 storage, the sudden impact of several hundred
9 construction workers on a city the size of Revelstoke
10 or Golden, especially if they had to provide
11 accommodation for overnight, may indeed be of some
12 concern.

13
14 I do not see that these issues
15 were addressed in your response to us. I wonder if
16 you might comment on that, Mr. Fox.

17 MR. FOX: No, they were not
18 addressed, Dr. Ross. You know, we are not going to
19 come in here with 800 employees and dump them into
20 the middle of Revelstoke and then let them fend for
21 themselves. That is not the way the system works.

22 What does happen is the idea of
23 having a parking lot, let us say, in Revelstoke
24 and/or Golden as a place for the employees who do
25 drive to bring their vehicles. That does not say
26 that all the people are going to drive. Some of
27 them are going to take buses and other means of
28 transportation to get here.

29 What we are thinking of doing,
30 and you know, this is really up to the contractor,



1 what we have to specify and really all we have to
2 specify in a contract is there will be no parking
3 in Glacier National Park, and really, it is up to
4 the contractor. We will tell him he has to have
5 a parking lot provided for him, but then he has to
6 do the dealings with the union and make his own
7 arrangements.

8
9 But the way I foresee it would
10 be if they work, let us say, a Monday to a Friday
11 night, and you have got shifts to worry about here.
12 Some of the shifts will be starting, let us say,
13 on the Monday night shift and they will not shift
14 until the Saturday morning shift or however it works,
15 and each one of those shifts, as they finish work
16 and they are going home for a weekend, they will be
17 bused individually to Revelstoke or Golden or wherever
18 it is they want to go and can go. Once they get
19 here, they will then take whatever transportation is
20 available to get them home. That is the whole idea
21 of letting them out of the camp.

22 We would imagine that during the
23 week you would have to run probably twice a week
24 service to one of these centers to allow these people
25 that want to come in to come in and buy the basic
26 necessities of life, although it can be bought in
27 the commissaries within the camp itself, but you know,
28 people being what they are, they may want to take
29 a look around downtown and maybe go in and have a
30 beer. After all, they are all human people, and you



E-19

1 know, they just do what every other human being does.
2 I do not really see a big problem
3 myself.

4 DR. ROSS: In preparing the
5 submission for us, did you consult with the RCMP
6 on whether they might want to know what you are doing
7 and how you are doing it? Did you consult with any
8 members of the Revelstoke Chamber of Commerce or
9 perhaps the Civic Government as well, because it
10 seems to me that these are impacts for which these
11 people ought to be alerted and for which they may
12 have some particular advice in terms of well, if you
13 just do it a little bit differently then the impacts
14 can be reduced.

15 MR. FOX: No, I have not done
16 that as yet.

17 DR. ROSS: Thank you.

18 MR. TENCH: Mr. Fox, your project
19 is coming on the heels of the hydro project which is
20 just terminating or has terminated. Have you got
21 a parallel there with regard to numbers of people and
22 treatment of people in camps?

23 MR. FOX: Well, I think the camp
24 population at peak anyway, I do not know what it is
25 today, at the camp at the damn site out here, but
26 at the peak of it it was something like 2500 workers,
27 and of course, they are within, what, three miles of
28 Revelstoke, so it is not really the same type of
29 situation.
30



E-20

1 In other words, whoever was off
2 shift could certainly and very easily get into
3 Revelstoke either by buses if they had to, or even
4 walk or take their own vehicles because they could
5 park out there.

6 MR. TENCH: So the impact on
7 Revelstoke would be less with your size of crew?

8 MR. FOX: In terms of numbers
9 at least two-thirds less.

10 MR. TENCH: Is there anybody in the
11 audience who could explain what happened in Revelstoke
12 while the hydro project was underway?

13 THE CHAIRMAN: I guess we can
14 always go for the information direct, George, if
15 nobody has got it here. We can obtain that somehow
16 or other.

17 Any further comments, questions
18 at this time? Mr. Fox, is there anything you would
19 like to add after this evening's presentations?

20 MR. FOX: I do not think so, Mr.
21 Chairman. Thank you very kindly.

22 THE CHAIRMAN: I do not believe
23 there is anything more from the panel at this time.

24 I would therefore like to thank
25 the people who came along this evening for coming
26 along, Mr. McCrory for coming along to make a
27 presentation, Parks Canada and CP Rail.

28 We will be adjourning this
29 meeting now and we will be restarting our hearings
30



E-21

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in Golden tomorrow. Thank you very much for
coming along.
---Whereupon the hearing adjourned at 9:30 p.m.

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ROGERS PASS ENVIRONMENTAL
ASSESSMENT PANEL

PUBLIC MEETINGS

CP RAIL ROGERS PASS DEVELOPMENT PROJECT

PLACE: Golden, B.C.

DATE: June 9, 1983.

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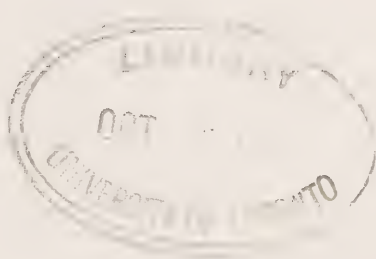
ROGERS PASS ENVIRONMENTAL
ASSESSMENT PANEL

In the matter of Public Meetings of the
Environmental Assessment Panel on CP
Rail's proposed new track development
in Rogers Pass.

PANEL MEMBERS:

P.J. Paradine -- Chairman
Dr. W. Ross
Mr. G. Tench

Held in the Curling Club, Golden, British
Columbia, on Thursday, the 9th day of June,
1983, at the hour of 7:00 p.m., Local Time.





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* * *



1 THE CHAIRMAN: (P. Paradine)

2 Good evening Ladies and Gentlemen.

3 I hope you can all hear me in the room here tonight.
4 If any of you are having difficulty, please indicate.
5 There are a few more seats up at the front if you
6 wish to take some of those.

7 I am Phil Paradine. Those of
8 you who remember me from last year remember that
9 I am Chairman of the Environmental Assessment
10 which is reviewing C.P.'s proposal for tunnelling
11 and twinning of track through the Rogers Pass in
12 Glacier National Park.

13 The members of the Panel are on
14 my left: Bill Ross and George Tench. This is
15 our final round of meetings tonight and on into
16 Calgary the next couple of days. The purpose of
17 these meetings is to advise the Minister on the
18 means by which the project can proceed in an
19 environmentally sound manner. This is done and is being
20 done in accordance with terms of reference provided
21 by the Minister of Environment. These terms of
22 reference are included in the Preliminary Report,
23 copies of which, I believe, are available at the
24 back of the room..

25
26 In the Preliminary Report we
27 requested further information from C. P. Rail and
28 that was provided to us in April of this year and
29 was passed out to the public, and we are now
30 requesting views from the public based upon this



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information that has been provided. Following this meeting and using this information that has been provided to us, we will be preparing a Final Report to the Minister of Environment.

The project has been approved in principal by the Canadian Transport Commission and the mandate of the Panel, therefore, is to determine the best way to minimize the impacts on the environment. If you wish to receive a copy of our Final Report, please leave your name at the back of the room and we will provide that to you when it is released by the Minister of Environment.

As far as procedures are concerned, I will not deal with them in detail but basically we will be having a presentation tonight by C.P. Rail, a general presentation; following we will allow time for presentation from members of the public, followed by questions and answers to clarify anything in the presentations.

After coffee break we will be having a presentation on wildlife and then we will be following up again with question and answer sessions and any remaining statements.

We are making transcripts of the record and if you do make a presentation I would ask that you identify yourself. There is a microphone at the front here and if you are making a presentation where you can sit down next to the



1 Panel Secretary, Guy R. Riverin We will be
2 having a coffee break and if you have any
3 questions at that time please approach the Panel
4 or C. P. Rail.

5 I think I would like to begin
6 then with C. P. Rail. I should just indicate that if
7 anybody wants to register to speak, please let
8 Suzanne Latour or Guy R. Riverin know. The first
9 presentation will be by Mr. Fox, and I will hand
10 it over to you now Mr. Fox.

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PM-4-A
1 (Fox)

2 MR. JOHN FOX, (C.P. Rail):

3 Thank you, Mr. Chairman; Ladies
4 and Gentlemen. Last year when I was here I gave
5 a rather complete coverage of the requirements of
6 C. P. Rail insofar as this new track is concerned,
7 including traffic and the basic need for what
8 we are proposing. I do not propose to cover that
9 ground again. What I will do is give you a very
10 general broad brush of what we have done in the
11 past year and perhaps I could say where we are standing
12 at the present time.

13 The Federal Environmental Assessment
14 Review Office interim decision in May of last year
15 allowed us to proceed with the portal construction
16 for the Rogers Pass Tunnel and clearing of the surface
17 route for an access road to carry out further
18 environmental and geotechnical investigations.

19 The west portal structure was
20 completed last year and repaving of the Trans
21 Canada Highway is presently being completed.
22 Access to the east portal and the retaining walls at
23 the east portal were completed last year and rock
24 excavation is presently underway.

25 The surface route from Rogers to
26 the east portal of the short tunnel was cleared for
27 the investigations to be described later.

28 As you have seen by the reports
29 we have presented to you, and the responses we
30 have made to your further requests for information,



PM-5-A

1 (Fox)

2 C.P. Rail has done a very large amount of work in the
3 14 months since the meeting last April. I feel
4 that we have more than adequately met or exceeded
5 the requirements for further information requested
6 by you and Parks Canada. I am looking forward to
7 these meetings to allow us to thoroughly present
8 the information to you and the public. We appreciate
9 the opportunity to describe and discuss work completed
10 to date and to demonstrate our commitment to complete
11 the Rogers Pass project with the highest level of
12 concern for the environment of Glacier National
13 Park.

14 I am also looking to these meetings
15 to serve as a forum to answer any and all questions
16 that the Panel, their experts and Parks Canada may
17 have on environmental, engineering, or commitment
18 issues. We have available for these hearings all
19 the experts who have worked with C. P. Rail over
20 the last year, and in many cases since the
21 beginning of the project. We have done this to
22 ensure that as many requests for information as
23 possible can be answered during the hearings.
24 So if you want to ask any of these experts any
25 questions, they are all sitting over here -- the
26 whole gang of them.

27 The report entitled "Rogers Pass
28 Project: Submittal to Federal Environmental Assessment
29 Review Office", dated June, 1983 was prepared
30



PM-6-A

1 (Fox)

2 specifically for this hearing, and that is the
3 Red Book that is on the back table. I think most
4 of you perhaps have picked one up.

5 In this Report and all the other
6 environmental and engineering reports previously
7 submitted, we have made every attempt to respond
8 to all expressed concerns. I also believe that
9 we have responded to both the Panel's and Parks
10 Canada's recent requests for further environmental
11 information.

12 Our basic approach has been to
13 define terms of reference for all studies through
14 discussions with Parks Canada. When work was
15 completed in mid-February of this year, we asked
16 Parks Canada and their experts to come to a workshop
17 to discuss results of all studies and to ask
18 for their comments and suggestions. We then
19 submitted draft copies of all reports to Parks
20 Canada prior to finalizing them for the FEARO Review.
21 We have responded to Parks Canada's subsequent
22 comments, as well as to a list of items which
23 the Panel indicated were not addressed completely,
24 either verbally, or in the reports submitted prior
25 to this meeting.

26 I do not plan to elaborate on all
27 the environmental studies we have conducted, as I
28 have consultants here who are more able to discuss
29 the technical details, and who will do so in the

(Fox)

appropriate sessions. However, I would like to give a brief summary of the work we have done in preparation for this public meeting and the work we will be doing in the future to ensure that the new railway is built to respect the National Park through which it passes.

Requests for further information have come from two sources -- the Panel in their preliminary Review last April, and Parks Canada in meetings since that time. The Panel's requests were grouped into five aspects of the project: the Rogers Pass Tunnel, the ventilation shaft, the surface route, the work force and the responsibility for mitigative measures and monitoring.

Looking at the questions on the Rogers Pass tunnel first -- the proposed new track will pass through one avalanche path, that being the Ross Peak Slide, which is located at the west portal of the Rogers Pass Tunnel. Automatic signals will govern trains at this location, enabling a westward train to stop within the portal structure. Eastward trains can stop clear of the west perimeter of the Ross Peak Slide.

The existing program of working with Parks Canada and the Canadian Army to control avalanches by means of gunfire will be continued. Procedures now used in controlling train movements in affected areas will be continued.



PM-S-15

1 (Fox)

2 With regard to disposal of material,
3 Parks Canada has stipulated, no spoiling and no
4 borrowing within the Park boundary, so we have come
5 up with the following general approach -- balanced
6 cuts and fills on the surface route east of the
7 tunnels and use of a minor amount of material as
8 subgrade for double tracking to the west.

9 Concern was raised for the
10 environmental effects of the double tracking to
11 the west, so our environmental consultants identified
12 the potential concerns in a report directed to the
13 Panel.

14 Water use and waste water treatment
15 have received considerable study in the past year.
16 Basically, we will need water for three purposes:
17 tunnel drill cooling and lubrication, cement plants,
18 and camp operation. We need water for drilling
19 at both portals of the Rogers Pass tunnel, the
20 ventilation shaft and at the west portal of the short
21 tunnel.

22 We plan to pipe water from the Beaver
23 River at the east portal of the Rogers Pass tunnel.
24 Water for the west portal of the short tunnel
25 will come from Connaught Creek. A small stream
26 will supply water for the ventilation shaft, and
27 water for the west portal will come from the
28 Illecillewaet River. After use, this water will be
29 treated in an oil separator and settling ponds
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PM-9-A

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(Fox)

before being released into the Beaver or Illecillewaet River or the small stream near the ventilation shaft.

We have outlined a monitoring and contingency system to ensure that the water treatment system works as designed. This system is described in the report submitted to these hearings.

Final proposed sites for settling ponds were based on reactions of Parks Canada to our report, submitted to them in March, in which we identified several possible sites at each location.

Another use of water will be for the cement batch plant which we propose to locate at Glacier.

A full description of the plant, its operation and pollution controls has been given in the report submitted to these hearings.

Water will also be required for camp operations. The water will be released after treatment into the source rivers.

The location of the ventilation shaft was one of the most controversial topics at the last hearings. At the hearings, I proposed an alternative location for detailed investigation. A further alternative site has been selected and approved by Parks Canada. Access to the site has been constructed and the site has been cleared for detailed geotechnical investigations.



PM-10-A

1 (FOR)

2 Air quality studies submitted
3 separately verified the quality of tunnel emissions
4 was acceptable and within the federal guidelines.

5 A study of the noise associated with
6 ventilation operations confirmed that the noise levels
7 would not adversely affect the public in the Park
8 environment.

9 Concern has been raised for the
10 visibility of this structure, so we have conducted
11 studies to see if and from where it would be
12 visible to the users of the Park. This study will
13 be fully described in Calgary at the designated
14 session by our visual assessment consultant.
15 However, I would like to briefly summarize what we
16 found.

17 We conducted experiments by tethering
18 red balloons at the proposed locations and elevation
19 of the tops of the vent stacks in the existing
20 clearing. We found that only the top few feet of
21 the two stacks could possibly be seen from various
22 viewpoints.

23 The Rogers Pass surface route
24 design was a process designed using all available
25 techniques and mitigative measures to develop a
26 realistic design that respects the integrity of
27 the existing environment and the highest engineering
28 practices. During this process, C. P. Rail
29 engineers worked in close collaboration with
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(Fox)

landscape architects and reclamation specialists to develop optimum environmental and engineering solutions. The following were considered:

1) Geometrical: The maximum horizontal curvature of 6 degrees, maximum grade of 1 per cent compensated on curves at the rate of 0.04 per cent per degree of curve.

2) Hydrological: Adequate clearance and bridge design at stream crossings considering both anticipated river discharges and debris flows.

3) Geotechnical: slope stability, groundwater control and soil preparation, design of cut and fill slopes and retaining structures.

4) Environmental: Minimal visual impact, and minimal overall terrain impact.

5) Construction: Feasibility of completely balancing earth quantities within the Park.

6) Existing topography: Steep slopes, landslide areas.

7) Climatic conditions: Groundwater clearances and frost protection.

8) Schedules: Coordination of activities.

9) Structural adequacy: This will be a permanent facility.



PM-12-A

1 (Fox)

2 Investigations for the design of
3 the surface route encompassed both engineering and
4 environmental studies.

5 The hydrological aspects of stream
6 crossings were investigated in detail with
7 design considerations developed for both water
8 and debris flows.

9 Three landslide areas have been
10 identified and have been investigated. These include
11 the Griffith Landslide, an unnamed landslide
12 and what we call the wet slide area. These will
13 be discussed in detail in the Calgary technical
14 sessions.

15 Primary consideration was given to
16 designing the railway to meet railway standards.
17 However, within this constraint environmental
18 considerations had the most important influence on
19 selection of the proposed design and detailed
20 route location.

21 Despite the engineering constraints
22 to maintain structural and overall adequacy, the
23 alignment and design were modified to minimize the
24 visual impact of the completed railway. Environmental
25 considerations and potential impacts generally
26 decided the proposed design and location.
27 Reclamation procedures, balancing earth quantities
28 and schedules to meet environmental requirements were
29 developed.
30



1 (Fox)

2 One major part of our work over the
3 past year has been reducing the visual impact of
4 this project to the minimum practicable by combining
5 engineering requirements with landscape architecture
6 and reclamation techniques. Our results are shown
7 on the various side panels.

8 In order to fully appreciate the
9 potential visual implications of the new surface route
10 in the Beaver River Valley, we undertook what is
11 probably the most comprehensive visual impact
12 assessment ever done in Canada. We will fully
13 describe that procedure in the scheduled presentation
14 in Calgary on Saturday. However, I would like to
15 briefly outline the interactive process between C.P.
16 Rail and its consultants to minimize to as much as
17 possible the visibility of this tract after our
18 reclamation is complete.

19 The first step was to develop a
20 complete inventory of all the visual features as
21 seen by eastbound and westbound travellers on the
22 Trans Canada Highway. This provided us with some
23 interesting results. First, we realized that the
24 landscape is visually diverse and complex so it has
25 a moderate to moderately high capability of visually
26 absorbing disturbances. We were also able to
27 identify those sections of the valley that were the
28 most visually sensitive from the perspective of Park
29 visitors using the Trans Canada Highway.
30



1 (Fox)

2 The use of computer-aided
3 methods made it possible to develop five different
4 designs, each one a refinement of its predecessor.
5 The refinement process focussed on the visually
6 sensitive areas and consisted of making adjustments
7 to the alignment to reduce cuts and fills as well
8 as locating numerous retaining walls and bridge
9 structures. Parks Canada reviewed the fourth design
10 in detail, and gave us comments which we incorporated
11 into the final.

12 The results of this process was
13 a significant reduction in the potential for
14 adverse visual impacts.

15 In summary then, the alignment
16 that we present to you is the most refined of all
17 the designs and is our best possible effort to protect
18 the visual integrity of Glacier National Park while
19 meeting the engineering requirements of a high
20 capacity rail line.

21 With the input from the visual impact
22 assessment, the environmental studies and the
23 engineering studies, we have also prepared a plan
24 for reclamation of the cuts and fills along the
25 surface route at the Beaver River Valley. The
26 reclamation program has been integrated with the
27 engineering plans to provide the very best program
28 possible. It has been designed to provide for
29 the rapid revegetation of exposed slopes as well
30



1 (Fox)

2 as for the establishment of a permanent cover of
3 trees and shrubs native to Glacier National Park.

4 We will be taking special measures
5 to ensure that erosion is controlled and that
6 reclamation is conducted as quickly as possible.
7 Our consultant has been conducting a number of
8 reclamation trials and tests in the Beaver River
9 Valley and we are confident that he has developed
10 procedures that will permit us to effectively
11 reclaim the disturbed areas.

12 I will not go further into the
13 details of the program now, as we will be
14 presenting these on Saturday in Calgary. However,
15 I would like to point out that we are committed to
16 providing the best possible reclamation of the disturbed
17 areas. It is this commitment to excellence throughout
18 the whole job that allows me to assure you that the
19 landscape will be reclaimed to a state that respects
20 the goals of a National Park.

21 The right-of-way required was
22 determined from the slope stake information along the
23 proposed design. The right-of-way was established
24 by locating it a minimum of 30 feet away from the
25 slope stake limit. Clearing will extent to 10 feet
26 outside the slope stake limit. One hundred fifty-
27 eight acres will be cleared inside the Park.

28 In response to the concern that
29 downstream aquatic environments could be affected
30

(Fox)

by surface runoff during and after construction, we conducted a study in 1982 to establish monitoring criteria. The results of that study are presented in our report submitted to the Panel, and I will not elaborate on them at this time. This study will be discussed in the Calgary Technical Session.

The surface route construction and reclamation will take place during the summers of 1984 and 1985, except for the elevated deck structure which will be installed in the summer of 1986.

All other construction will begin in the spring of 1984 with scheduled completion in November of 1988.

C. P. Rail has developed and separately submitted construction procedures for the surface route.

We have gone into some detail in the report on the procedures for handling toxic or hazardous substances. However, I will simply state here that we will specify in our contract documents that all contractors must meet Federal guidelines for storage, handling and transportation of all fuels and other chemicals. Contingency measures must be put in place to avoid any negative environmental effects in the event of accidents. The Environmental Coordinator will have the authority to ensure that standards are



1 (Fox)

2 maintained.

3 During operation of the railway,
4 C.P. Rail has strictly enforced procedures
5 that are followed when dangerous commodities are
6 transported anywhere on the rail network.

7 Passenger train speed on the new
8 line will be 30 miles per hour maximum. Heavy
9 bulk commodity trains will generally be travelling
10 at approximately 15 miles per hour. At this speed,
11 a derailed car will in all probability remain on the
12 grade, thus minimizing the probability of any toxic
13 spill.

14 Power for the ventilation system
15 and tunnel lighting will be brought from Revelstoke
16 with a 34.5 KV transmission line. The power
17 circuit will be run along C. P. Rail's right-of-way
18 in an underground trench within the Park. The buried
19 cable trenches will be located in the ditch within
20 the C.P. Rail right-of-way.

21 Concerns passed that the second
22 track may result in more moose collision deaths of moose
23 caused us to do a detailed study of moose movements
24 this past winter.

25 In brief, we found that there may
26 be less than 10 moose in the Beaver Valley in Glacier
27 National Park and if there is a potential problem,
28 it is likely to occur primarily at Mountain Creek.
29 However, the conclusive evidence indicates that the
30



1 (Fox)

2 of locating outside the Park are not justified for
3 the reasons given by Parks Canada. For economic
4 reasons, therefore, we request that the camps
5 be approved in the Park as originally agreed to
6 by Parks Canada in their statement to this Panel
7 last year. Details on the camps will be
8 discussed in the session Friday evening in Calgary.

9 In addition to the studies carried
10 out in response to the Panel's requests, we have
11 also undertaken several studies to answer questions
12 raised by Parks Canada at or since the hearings
13 last year.

14 At the hearings, we were asked to
15 see if there were any raptor nests along the right-of-
16 way and to determine if the elk seen by Canadian
17 Wildlife Service personnel were still at Stoney
18 Creek. These studies were requested prior to
19 clearing the surface route or building the access road
20 at Stoney Creek. In surveys conducted immediately
21 after the hearings, no raptor nests were found on or
22 near the route and it appeared that the elk had
23 left some time before the survey.

24 With that information, Parks
25 Canada gave us permission to build the access road.
26 Prior to clearing the access road, biologists conducted
27 vegetation and wildlife surveys. These are
28 summarized in the report tabled for these hearings.
29 The vegetation information will be used as a
30



1 (Fox)

2 catalogue for the reclamation plan to ensure
3 that continuity with the surrounding vegetation is
4 eventually achieved.

5 The FEARO Panel concluded last
6 June that a committee concentrating on
7 environmental issues was required. An Environmental
8 Coordinator was also specified and one has been
9 employed since shortly after the FEARO hearings.

10 The Committee structures in
11 place are as follows:

12 A steering committee is
13 responsible to sanction all plans and ensure all
14 items are dealt with in a timely manner and act
15 as an arbitrator.

16 An environmental committee ensures
17 that conditions established by the FEARO Panel are
18 carried out and approves environmental aspects of
19 plans.

20 Design committee reviews design
21 before and during construction to ensure that it
22 is environmentally acceptable.

23 The implementation committee
24 deals with problems that may arise and serves as
25 a formal communication medium for its members and
26 solves day-to-day problems and seeks guidance from the
27 environmental committee. It is proposed to
28 maintain the above committee structures for the
29 construction project.
30



PM

1 (Fox)

2 The role of the environmental
3 coordinator is to serve as the day-to-day contact
4 for Park wardens and other inspectors and ensure
5 that construction operations are carried out by
6 the contractors using good environmental practices and
7 in accordance with the agreements reached by the
8 committee.

9 A complete monitoring program
10 has been developed for tunnel effluent, sewage
11 treatment, visual considerations, reclamation and
12 work camp monitoring.

13 C. P. Rail has demonstrated its
14 interest in environmental protection by producing
15 a number of exhaustive studies in response to the
16 concerns of FEARO and Parks Canada.

17 State-of-the-art technology was
18 used to allow environmental planners, reclamation
19 specialists and engineers to work in an interactive
20 way to produce a design that will minimize terrain
21 and visual impact.

22 This dedication to the various
23 mitigation measures outlined in this report will
24 continue throughout the construction phase
25 and subsequent reclamation. An extensive monitoring
26 program, erosion contingency measures and adherence
27 to the highest standards of environmental protection
28 will assure construction of a second track that
29 respects the natural integrity of Glacier National
30 Park. Thank you very much.



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THE CHAIRMAN: Thank you, Mr. Fox.

Do we have any presentations from anybody here in the audience tonight? If you would like to come up to the front here and sit down. I can see the sound is not very good.

If you would like to come up and make your presentation from the table here.

CHRIS SCHIESSER (Big Bend Resource Society): Chris Schiesser, and I am representing the Big Bend Resource Society.

We would like to express our appreciation of receiving copies of all Panel reports ahead of time, thus enabling our members to assess the revisions of the original plans.

I have a note here. As a conservation group, we regret that this valuable information is printed on one side only of the paper.

The Golden area is concerned mainly over two topics. First, the reclamation of surface disturbances in the area between Cupola Creek and the Park boundary near Mountain Creek. We would like to be assured that the reclamation will be monitored in the same manner as within the Park.

Secondly, the location of work camps. There appears to be a conflict; as the Parks Department has stated, it is opposed to locating camps within Park boundaries at Beaver and Flat Creek while the C.P.R. is so far adhering to their original proposed sites within the Park due to the added



R-2

1 (Schiesser)

2 expense of locating them outside of the Park.

3 As the Beaver site was used in
4 the construction of Highway number 1 and is still
5 visible, it would seem to be acceptable for the
6 railway construction. Bear problems would be
7 minimal at this location. There is far more likelihood
8 of bear problems at Cupola Creek should a camp be
9 located there.

10 However, the Flat Creek site is
11 located at a former natural caribou crossing from
12 Bostock Creek, and while few sightings of these
13 animals have been reported recently, a study of these
14 animals in Glacier Park is scheduled, I believe, for
15 1984. The alternate site suggested at Illecillewaet
16 is relatively close to the Park boundary and would
17 appear to be quite acceptable

18 At both these sites, the proposed
19 reclamation plans would greatly improve the present
20 appearance of these sites as visible from the highway.

21 In view of the importance of the
22 double tracking of the C.P.R. in order to provide
23 more efficient transport of goods and passenger
24 services in the future, the environmental plans as
25 now proposed appear to be adequate and acceptable.

26 THE CHAIRMAN: If you could just
27 hold on there for a moment, Miss Schiesser, in case
28 there are any questions. I am going to ask, first
29 of all, C.P. Rail if they have any comment or any
30



B-3

1 questions following that presentation?

2 MR. FOX: Thank you, Mr. Chairman.

3 I do not have a question, but I would like to make
4 a comment.

5 I believe your first concern was
6 relative to the reclamation between the west end of
7 the Rogers siding up to the Park boundary; is that
8 correct?

9 MRS. SCHIESSER: Yes.

10 MR. FOX: I can assure you it will
11 be reclaimed to the same standard as we are using
12 within the Park itself.

13 MRS. SCHIESSER: Thank you.

14 THE CHAIRMAN: Panel, do you have
15 any questions? Bill Ross?

16 DR. ROSS: Mrs. Schiesser, I am
17 not sure I understood your last point about the
18 work camps. You indicated that the environmental
19 plans and so on of C.P. Rail were adequate. Was
20 that specifically for the work camps in the Park
21 at Flat Creek and at Beaver Creek, or was that
22 specifically for work camps outside of the Park?

23 MRS. SCHIESSER: Well, there is no
24 mention of the work camps outside of the Park. The
25 provisions within the Park are adequate as far as
26 I am concerned.

27 DR. ROSS: So you find the provisions
28 for the camps within the Park to be acceptable then?

29 MRS. SCHIESSER: Yes.
30



B-4

1 DR. ROSS: Thank you very much. I
2 was not certain of that.

3 THE CHAIRMAN: I understood that
4 you had a problem with the Flat Creek side, but
5 the Beaver Creek to you was acceptable.

6 MRS. SCHIESSER: Yes.

7 THE CHAIRMAN: Any questions from
8 members of the audience on this? Parks Canada, is
9 there anything you want to ask or any comments?

10 Thank you very much, Miss Schiesser.

11 Do we have any other presentations
12 at this time?

13 Perhaps, Panel, traditionally we
14 ask some questions after C.P. Rail's presentation.
15 Probably the Panel has some questions concerning
16 your presentation, some general questions, and then
17 if there are any members of the audience who have
18 questions, we can pass to them.

19 George Tench, you have a question?

20 MR. TENCH: A question for Parks.
21 Have you had a chance to review C.P. Rail's concrete
22 batching plant arrangement at Glacier? Have you got
23 any comments on the location of that batching plant
24 and any comments on the pollution control measures
25 that they are outlining? Are you satisfied with
26 these arrangements?

27 MR. GALLACHER: We have not had an
28 opportunity to review the plans for the batching plant
29 They did have a plant there last year and if it
30



B-5

1 operates in any manner like that one did, I think
2 we will be very satisfied.

3 DR. ROSS: Excuse me, I wonder if
4 I might pursue that one a little bit farther.

5 I wonder, perhaps, Mr. Gallacher,
6 if you could inform me are there any standard air
7 quality monitoring procedures that are associated with
8 batch plants or cement plants in the Park? Would
9 that follow as a matter of course?

10 MR. GALLACHER: Yes, that would
11 follow as a matter of course. There are standards for
12 batching plants.

13 DR. ROSS: But is the performance
14 monitored in terms of air quality and so on?

15 MR. GALLACHER: Well, we could have
16 it monitored. We have a scientific task force that
17 is qualified to monitor such things.

18 DR. ROSS: I see. I wonder, Mr.
19 Fox, if you know of any plans to monitor air quality
20 associated with the batch plants? Is that something
21 that you would do regularly or ---

22 MR. FOX: Well, certainly we are
23 very concerned about it and the contractor will be
24 advised that any operations such as you are mentioning
25 batching plants, the air quality at and around the
26 plant will have to meet the federal guidelines, so
27 monitoring will take place to ensure that that
28 standard is met.
29

30 DR. ROSS: I am tempted to go off



B-6

1 onto monitoring, but I think I interrupted Mr.
2 Tench.

3 MR. TENCH: No, go ahead.

4 DR. ROSS: In terms of monitoring
5 not just air quality, but monitoring generally, I
6 gather there are a number of comments on exactly
7 what you propose to monitor in the red book, but it
8 seems to me that the objectives of monitoring are
9 largely two-fold, one of which is to identify any
10 problems and to provide remedial measures, but the
11 other one is to provide information to C.P. Rail,
12 to others in terms of how mitigation measures work,
13 what problems do arise, and in that respect,
14 monitoring somehow has to be coupled with evaluation
15 of the various mitigation measures that are in force
16 and must be coupled with some provision of information
17 to the public so that the public can see that these
18 mitigation measures are working properly so that
19 other people who may wish to use them at later dates
20 will have good information and what works and what
21 does not, just in the same sort of a way as your
22 work has relied on the work of others, some of the
23 water quality efforts that have taken place in B.C.

24 I wonder if there are plans
25 related to this monitoring to make the results of
26 the monitoring public, not just in terms of the
27 numbers that come out in the air quality monitoring,
28 for example, but rather with an evaluation of the
29 success of environmental mitigation measures and
30



B-7

1 descriptions so that others may know how to use
2 them. Are there some plans for that as well?

3 MR. FOX: Well, I had not quite
4 thought of carrying out that type of investigative
5 procedure and then putting it in print, but certainly
6 with the monitoring going on, there is no harm in
7 keeping, let us say, monthly records, and every six
8 months or whatever the period might be putting
9 together a document indicating what we are doing,
10 what we have found and how we are handling various
11 problems as they arise and what the results of our
12 efforts are. I think perhaps that is what you have
13 in mind, is it not?

14 DR. ROSS: Well, that and some
15 evaluation I think may also be important. But in
16 some ways that is inherent in monitoring.

17 MR. FOX: I am not sure, you know,
18 public-wise what bodies we would be giving it to.
19 I can see perhaps giving it to the Environmental
20 Panel; I guess it would be useful to universities
21 that work in that line. I would suggest that the
22 general public at large, some people of course would
23 be interested, but I would suggest that a large
24 number of them, number one, perhaps would not
25 understand what you are doing, and number two, there
26 would be a great number that would not care really.

27 DR. ROSS: I think in large part
28 you are right. It would be the environmental science
29 profession, interested environmental groups, Parks
30



B-8

1 Canada and others; technical agencies, of course,
2 would be interested as well.

3 MR. FOX: I would suggest perhaps
4 if the information was assembled and people advised
5 that it is available for anyone that perhaps might
6 want to look at it, that can certainly be arranged.

7 DR. ROSS: Thank you.

8 THE CHAIRMAN: George Tench.

9 MR. TENCH: Mr. Fox, on this
10 monitoring, there seems to be a tendency to monitor
11 things that have gone wrong, for example, watching
12 the siltation downstream on some of the creeks
13 below the construction. What measures would you
14 take with the contractors to try to prevent these
15 things happening in the first event, or have you got
16 anything more than the usual contract requirements
17 to stop heavy erosion and this sort of thing from
18 occurring in the first place?

19 MR. FOX: Well, I think, of course,
20 you have to put it in a contractual form so far as
21 the contractors are concerned, but I think in this
22 particular instance we will go a lot further than
23 we have in the past and outline to the contractors
24 exactly what we have in mind in terms of controlling
25 the erosion.

26 So far as monitoring it, we will
27 do that ourselves. We are not going to let the
28 contractor do the monitoring, I can assure you,
29 because he will never have a problem. We will look
30



B-9
1 after that one ourselves.

2 THE CHAIRMAN: Do we have any
3 questions from anybody in the audience at this
4 point concerning C.P. Rail's proposals? C.P. Rail,
5 I believe you have a comment.

6 MR. FOX: I would just like to refer
7 to last night's session, Mr. Chairman, if I may.
8 Dr. Ross at that time was questioning Mr. Gallacher
9 on what information had been given to towns and this
10 sort of thing from the Environmental Panel, I believe
11 it was Dr. Ross.

12 I would like to tell you what has
13 been done, not through the Environmental Panel, but
14 through C.P. Rail. We made a number of media
15 releases last year on the jobs that were going on as
16 to the start, as to the progress, where they were and
17 so on and so forth, and these were carried on radio,
18 television, newspapers, including, I might add, the
19 Globe and Mail.

20 In addition to that and probably more
21 important, we provided an on-the-spot PR person
22 at Revelstoke throughout last year's construction
23 season, and he was kept in Revelstoke during the
24 whole of the season. As a matter of fact, they
25 rotated him every two weeks and he had all the
26 necessary information. He contacted the media and
27 anybody who was interested in those things, he had
28 the information to provide. That was done last year.

29 THE CHAIRMAN: I believe there may
30



B-10

1 be some more questions from the Panel. Bill Ross.

2 DR. ROSS: One of the concerns
3 that was raised was the issue of bears. In this case
4 I am thinking of them outside of the work camps.
5 I guess perhaps I should first direct the question to
6 Mr. Gallacher on behalf of Parks Canada. I gather
7 in the past carcasses of animals have been deposited
8 in the Stoney Creek area and this has attracted grizzly
9 bears to the area.

10 I think we heard last year that this
11 practice had been stopped or was being stopped. I
12 wonder what the current status of that practice is
13 and any comments you might have on grizzly bear
14 problems which have occurred in that area.

15 MR. GALLACHER: We actually have
16 not had any grizzly bear problems. We have not had
17 any interface with the humans in that particular area.
18 The area was used as a disposal yard and grizzlies
19 were observed in the area.

20 What we have done now, since we
21 put the access road in there, we have located another
22 area for disposal of carcasses and that is up by
23 the bridge on Mount Tupper. It is above the east
24 portal of the Connaught Tunnel. There is an area up
25 there on that old roadway, and we are using that now
26 to dispose of carcasses. That is also a grizzly bear
27 habitat.

28 DR. ROSS: One of the concerns
29 raised with respect to grizzly bears is the fact that
30



B-11

1 they learn fast and forget slow. Are grizzly bears
2 still sighted in the vicinity of the Stoney Creek
3 area that was used in the past, and I guess what
4 I am leading to in particular was were there any
5 encounters or bear problems at all in that area this
6 year linked to the surface route, the access road
7 being prepared -- not this year, but last year,
8 rather.

9 MR. GALLACHER: Not that I am aware
10 of, and I would certainly be told of them.

11 DR. ROSS: Mr. Fox, do you know of
12 any?

13 MR. FOX: I never heard of any
14 bear problems. Nobody even saw one to the best of
15 my knowledge.

16 DR. ROSS: Thank you.

17 THE CHAIRMAN: Any more questions
18 from the Panel?

19 MR. TENCH: We will be speaking
20 about noise probably in Calgary from the ventilation
21 equipment and the subject of 55 decibels has been
22 used as a sort of guide point. If it is found that
23 these fans are producing more noise, a more
24 objectionable noise, Mr. Fox, do you have any other
25 attenuation possibilities in that plant if you have
26 to cut this noise down any further?

27 MR. FOX: I sure have. I have a
28 consultant in the audience here who is going to be
29 awful sorry, for one. He might be the attenuation
30



B-12 1 problem.

2 If we get into that, certainly we
3 will have to do more attenuation.

4 MR. TENCH: Would you have any idea
5 of what form this would take? Would it be more
6 buildings or would it be ---

7 MR. FOX: I prefer to let the
8 experts answer that question. That is beyond my
9 capabilities. I can assure you if they exceed whatever
10 it is they specify, God help them.

11 MR. TENCH: I presume you would like
12 that last remark off the record.

13 MR. FOX: Mr. Levy can perhaps answer
14 that for you if you would like to have an answer at
15 this time.

16 MR. LEVY: My name is Sam Levy. I
17 represent Parsons, Brinckerhoff, Quade and Douglas.

18 Our firm has performed the noise
19 analysis and I can assure you that the measures that
20 have been taken in evaluating the estimated noise
21 levels have been, to the best of my knowledge,
22 extremely conservative and that we believe there is
23 considerable conservatism within our analysis.
24 However, if in the event the criteria is not satisfied
25 there are provisions for lining the various ducts in
26 the ventilation building and also lining the
27 walls of the ventilation building.

28 These provisions have not been
29 included in our analysis, and therefore, we have
30



B-13

1 the capability of providing them some time in the
2 future.

3 MR. TENCH: That is good. So that
4 we would not be faced possibly in the future with
5 having to deal with too much noise and then having
6 as an ultimate to have to deal with too much building
7 sticking up over the trees? In other words, you
8 would not want to extend that building as part of
9 an attenuation process?

10 MR. LEVY: No, we would not.

11 THE CHAIRMAN: Unless we have any
12 more questions from anybody in the audience on noise,
13 perhaps, Dr. Ross, you have some other questions?

14 DR. ROSS: I guess these questions
15 deal also with the vent shaft, not so much with the
16 noise from it but rather with the investigations for
17 it.

18 I was a little bit puzzled and I
19 am still a little bit perplexed about some of the
20 comments that were made in the foundation investigations
21 so this may be as good a time as any to raise them.

22 In the report of Thurber
23 Consultants, it is suggested that the site should
24 be investigated and compared to alternatives. If
25 I understand it, C.P. Rail is in fact proposing not
26 to study any further alternatives at all but rather
27 to put the vent shaft exactly where we visited this
28 morning, in fact. That is correct. Is this
29 recommendation by Thurber Consultants that alternatives
30



B-14

1 be compared. Is that simply something that was done
2 last fall?

3 MR. KLASSEN: Do you have the page
4 number of the report?

5 DR. ROSS: My notes say it is
6 Part 2 in the Synopsis, but I seemed to have grabbed
7 the wrong copy here so I could not find it, but the
8 specific notes I have is that it is suggested that
9 this site be investigated and compared to alternatives
10 Synopsis of Part 2 of the Ventilation Shaft Site
11 Investigations.

12 While you are at it on page 31 there
13 is a further note which makes recommendations for
14 foundation studies for the head house. Again, I am
15 wondering if particular geotechnical problems were
16 anticipated by Thurber Consultants in making that
17 recommendation? That one is page 31.

18 MR. KLASSEN: Is it in the summary
19 conclusions; would that be where it would be?

20 DR. ROSS: The only note I have is
21 Part 2, Synopsis.

22 MR. KLASSEN: We drilled test hole
23 82-1 first, which was the first site that was proposed.
24 There were problems with that site and we went to 82-2
25 and it was better. The comment was just made to
26 consider in terms of economics which one was better,
27 but the site was better. We have selected that
28 site, and it was proposed to do a water well pump
29 test there which we have done last fall.
30



E-15

1 DR. ROSS: I guess, Dr. Buck, was
2 there anything particular that you had concerns
3 about that would have led you to suggest looking at
4 other alternatives?

5 DR. BUCK: Well, I think the point
6 being that at both of the sites there was ground
7 water encountered, and of the two, the test hole 82-2
8 was considered preferable but the water well
9 investigation was recommended and should be part of
10 the total evaluation, and that water well investigation
11 was initiated last fall.

12 DR. ROSS: Do you have any
13 continuing concerns about the current site in terms
14 of its viability?

15 DR. BUCK: Well, it's not a
16 question of liability; it is a question of design
17 information, design information for the design of the
18 shaft.

19 DR. ROSS: Then moving on to page
20 31, the recommendation for the foundation study, that
21 is the same concern, that is just want to have
22 enough information for foundation design?

23 My notes say page 31 there is a
24 recommendation for foundation study for the head house.

25 DR. BUCK: That has subsequently
26 been done.

27 DR. ROSS: I see. Finally, on
28 that matter, I could not find in the documents that
29 we received an indication of why that vent site
30



B-16

1 was so far from the tunnel. Has the tunnel been moved
2 to get it nearer because I notice that in the latest
3 map I found that the tunnel had vanished from the
4 map, which I took to mean that it was no longer where
5 it used to be. I gather, at least somewhere I think
6 I have heard that it has been moved to get closer to
7 that vent site?

8 MR. FOX: Yes, what we did, Dr.
9 Ross, having to move over to the location where we
10 are now considering, if we left the tunnel on its
11 original alignment, which was tangent, I might add,
12 it meant that we would have to provide two cross
13 tunnels from the air vent of some 4,000 feet long
14 each and it just became really a matter of economics.
15

16 By swinging the tunnel around and
17 we put a very slight reverse curve in it, two 30
18 minute curves, as a matter of fact, and that brought
19 the tunnel to the required lateral spacing required
20 at the vent shaft and added approximately 600 feet
21 to the vent of the tunnel. So that seemed to be the
22 correct way to go.

23 DR. ROSS: I thought that was the
24 case. I just wanted to clarify it.

25 MR. KLASSEN: A conceptual drawing
26 of that is on there.

27 DR. ROSS: Yes. Thank you.

28 THE CHAIRMAN: George Tench, do you
29 have a question?

30 MR. TENCH: Question for Parks



B-17

1 Canada. The various settling ponds that are needed
2 to get siltation and other things out of water, they
3 have now been fairly well defined by C.P. Rail. There
4 has been quite a lot of discussion and quite a lot
5 of disagreement in the past on these things. Are
6 you now in settlement on the location of the settling
7 ponds?

8 MR. GALLACHER: We are in agreement
9 with the location of all the settling ponds other
10 than the one for the vent shaft, and we really do
11 not have a handle on that yet.

12 MR. TENCH: On its location?

13 MR. GALLACHER: Yes, that is correct.

14 While I am up here, may I ask a
15 question of Mr. Fox about the vent shaft? It was
16 my understanding, Mr. Fox, that that well hole was
17 to be drilled to a predetermined elevation last
18 fall. Was that drilled to that particular elevation?

19 MR. FOX: No, it was not, Mr.
20 Gallacher. That water drill hole was supposed to go
21 down to the rock surface, which is some 300 feet from
22 the surface, and they got down to I think it was
23 194 feet when they got their casing stuck and they
24 could not get it up and they could not get it down,
25 and we ended up by throwing a bit of money away.
26 We have to go back in there and rebuild it after
27 we get this access road going this summer.

28 MR. GALLACHER: Therefore, we really
29 do not know what the water capacity or the water
30



B-18

1 flow is there yet?

2 MR. FOX: Not precisely, but from
3 the information we got on the initial drilling, we
4 know it is less than the one that we tried last
5 summer, which is further down the slope.

6 MR. GALLACHER: Very well. Thanks
7 very much.

8 THE CHAIRMAN: Have either of you
9 got any questions at this time? Dr. Ross has always
10 got a question.

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PM -C

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DR. ROSS: I wonder if you could enlighten me about that landslide area that came down on the Trans Canada Highway. To what extent has there been impact or any results for the beaver colonies down below the highway down there? Was there much material that found its way into that area or did it sort of get stopped by the highway?

MR. FOX: You are referring to the one that occurred on the highway?

DR. ROSS: That is correct. The one that occurred, I believe in April?

MR. FOX: I think most of it was on the road or adjacent to the road to be cleared out. I did not see the actual extent of it personally.

DR. GEOFF BUCK: It is my understanding that most of material stayed on the highway.

DR. ROSS: So not a significant amount managed to get down?

MR. D. POLSTER: That was not quite clear when we saw it today -- it was only cleared, but there used to be a bunch of material somewhere and it is now all gone.

MR. FOX: There was a truck that went down into the beaver pond.

DR. ROSS: Yes, I understand and it has now been removed. The erosion of that area right now is it being monitored at all?



PM-C

1 It seems to me that that is quite a length of open
2 area which may cause some further problems -- I am
3 not sure, but is there any special attention
4 being given to it now?

5 MR. FOX: Yes, there is, Doctor
6 Ross. The first thing that we were going to do
7 was we were fluming that water completely down
8 the slope in a flume. If you noticed today when
9 we were looking at it, the flume does not extend
10 to the bottom of the fill, and that will go down
11 to the bottom. There is a short ditch leading
12 away from the fill down the slope and we will
13 pick that up again in flumes as it passes some
14 of the flat area and flume it down to the highway
15 culvert. That will carry the water.

16
17 Now the second thing we are
18 doing and it has not been done yet but it will be
19 done, and as a matter of fact it is organized
20 to be very shortly, is that that whole area will
21 be rehabilitated in terms of plantings and seedings.

22 DR. ROSS: That was my next
23 question. I have forgotten exactly where the
24 alignment is relative to that?

25 MR. FOX: From the highway, it is
26 roughly 300 feet away.

27 DR. ROSS: But there will be
28 revegetation efforts undertaken in that area
29 this year?

30 MR. FOX: Yes, very definitely.



1 DR. ROSS: And what will these
2 revegetation efforts consist of?

3 MR. FOX: I'm sorry?

4 DR. ROSS: What will the revegeta-
5 tion efforts consist of?

6 MR. FOX: I think they will
7 probably start about August to pick up the late
8 summer rainfalls.

9 DR. ROSS: And that is grass and?

10 MR. FOX: Grasses and shrubs.
11 Doctor Ross, would you like a further comment?
12 I have Mr. Polster here and he is the guy that is
13 supposed to be doing it and as a matter of fact
14 I understand he has already seeded it. So he can
15 perhaps explain a little more to you than I can.

16 MR. DAVE POLSTER: Yes, I do not
17 know when you were looking at it that -- we were
18 out there a couple of weeks ago and put some seed
19 down on the site. That has only caught in the
20 areas that were quite moist, and we have not had
21 any rain since. So most of the seed is just
22 sitting there on the surface. You can actually
23 see it if you look closely, and, of course, it has
24 caught where it is moist. We are going to be doing
25 this summer, testing some techniques for
26 stabilization of steep slopes and that is a very
27 steep slope there, which we hope will be successful
28 using reinforcing meshing and soil stablizing
29 sprays that sort of thing in combination with the
30



1 late summer seeding.

2
3 MR. TENCH: Coming out of the
4 Park coming east in, towards Golden a lot of the
5 slopes on the highway have quite a lot of grass
6 on them. Has there been, to the best of your
7 knowledge, a seeding program on that stretch of
8 highway?

9 MR. POLSTER: Yes, the Highways
10 Department regularly conducts revegetation efforts -
11 the B.C. Department of Highways along their
12 right-of-ways. In some places it is more
13 successful than others.

14 MR. TENCH: Are they just using
15 grass or we noticed quite a few --

16 MR. POLSTER: No, it is just
17 a straight grass legume seeding, and it is a
18 pretty standard mix that they use throughout the
19 whole Province actually. So in some places it
20 does better than others. The trees have regenerated
21 naturally.

22 THE CHAIRMAN: While we have
23 got you up here at the front, if I understand
24 you correctly, you are going to be experimenting
25 with revegetation methods in that area of very
26 steep slopes from Stoney Creek along to the east
27 portal of the short tunnel. What I was wondering
28 was in view of the fact that there had been a
29 little slippage there this summer, and we have had
30 a relatively dry spring I understand, I am a little



1 concerned about the potential for some more
2 slippage given a wet spring possibly next year.
3 Why would you not want to move in fairly quickly
4 and revegetate to stablize the soil all the way
5 along there? If, as I understand it -- do you
6 have some more terrain movement to take place in
7 that particular area, or I thought you were going
8 to put a tressel structure in which was going to
9 follow basically the route you have now? One of
10 my assumptions in there must be wrong. The
11 basic question is why would you not revegetate
12 the whole lot right now to avoid problems?

13 MR. FOX: When you mean "right
14 now", you mean right now. Today. Well, I think
15 this is, and Dave Polster can correct me if I am
16 wrong -- I am not a planting expert -- you know
17 I fool around in the garden and things like that
18 like the rest of us, but I would suggest that
19 now would not be the time to decide to seed those
20 slopes, because you are coming into the dryer
21 season of the summer and you will not get any
22 germination.

23 Now we carried out, Dave, I think
24 last June on the Mountain Creek slopes up at the
25 existing main line; we seeded that about this
26 time of year and we did not get any growth
27 whatsoever until about a month and a half later
28 when we finally got a rain on it, and we could be
29 faced with the same thing. So really what we
30 are trying to do is get in there about August when



1 we know we are going to get some of the later
2 summer rains and you will get a good growth.

3 THE CHAIRMAN: Okay, well say
4 August -- whatever is a good time to do it, why
5 would you not go all the way along on that particular
6 section where you are going to put that viaduct
7 tressel structure in?

8 MR. POLSTER: If I might just
9 comment, that is what we are planning to do.
10 We are going to be testing those specific techniques
11 that I mentioned, the netting and the application
12 of soil stabilizing spray primarily on the cut
13 slopes as there is a concern that we do not want
14 the cut slopes eroding further away from what is
15 now the center line.

16 The fill slopes will probably be
17 high growth seeding while we are in there as well.
18 There is not a big area and we will probably do
19 that as we pull back.

20 There is some concern that in
21 order to build the viaduct through there there
22 is going to have to be some straightening of that
23 turkey trail through there. So we will see how
24 much we can actually reclaim now and how much
25 would have to wait until after it gets straightened
26 a bit.

27 MR. TENCH: Could I ask for some
28 details on what would happen, Mr. Fox, when you
29 put that tressel in, and probably to simplify the
30



1 thing it will have an upstream leg or an uphill
2 leg and a downhill leg. Are you going to get
3 both those leg foundations in from the present
4 access road or will you digging in a second
5 access road along the length of tressel?

6 MR. FOX: Oh, I think we can get
7 it in from the existing access road. If we go
8 to steel-type tressel, which really requires four
9 concrete pads, one for each leg; it will have
10 four towers with a short span, and then the other
11 spans hook onto it, they will be something of the
12 order of eight by eight feet square, and, of course,
13 it will have to go down below frost, and there
14 will be some excavation, and they will be tied into
15 the existing slope by the means of proper anchors
16 so they do not go slip and sliding down the slope.

17 I think the equipment to do that
18 would be relatively light and we could always
19 lower it down that slope at the spots required.
20 Hopefully we can spot those foundations so that
21 they will come on the knoll or the nose of the knolls
22 there where we have the best soil conditions and span
23 the ravines. We are in the process of working
24 out that spacing on that basis.

25 MR. TENCH: When you have got
26 the tressel in, there would be no reason then to
27 work from that access road afterwards for maintenance?
28 I presume then the access road will just gradually --
29 presumably it would be reseeded, and if there is
30



1 any slippage from the sides, it will either be
2 dealt with or reseeded will take place, but
3 eventually you would not need that access road?

4 MR. FOX: Not that I can foresee.
5 it is always nice to have an access road into a
6 bridge but that is not much of an access road.

7 My own thinking is and I will have
8 to defer my comments to my soils experts, but my
9 thinking is we would take off not the bottom of
10 the fill but the top of the fill where it comes
11 up to meet what is now the travel surface and pull
12 that up and try to get that back up against the
13 upper slope, and then seed the whole thing. I
14 think doing it that way we would be able to flatten
15 that out a little bit and that will stop the
16 erosion.

17 THE CHAIRMAN: I think that just
18 about answers the question mainly that I had and that is
19 that you see the existing slope in there as being
20 pretty well left as it is with the exception of
21 smoothing out where you have your access road?

22 MR. FOX: That is right.

23 THE CHAIRMAN: So, therefore,
24 you can go in and seed this fall if you like for
25 a large part of the work along that particular right-of-
26 way?

27 MR. FOX: Yes, between Stoney
28 Creek and the east portal area that will be seeded
29 up slope, down slope, and the up slope will also have
30



PM-C

1 this reinforcing mesh applied to it to hold
2 everything in place, hopefully. This is what
3 we assume it will do, we hope it will do, but
4 once the tressel foundations have been built and
5 the structure itself erected, we will have no
6 further use of that road; then we do the
7 smoothing off and do the final seeding, et cetera.

8 THE CHAIRMAN: Okay, in the book,
9 the Red Book that you gave to us, I thought that
10 the main reclamation work was not going to take
11 place until next year -- that your construction
12 schedule was to put in those foundations for the
13 tressel and to do the reclamation work? What I
14 am hearing now is that you are going to get
15 started on the reclamation work this fall --

16 MR. FOX: Oh, yes.

17 THE CHAIRMAN: -- and you are
18 going to complete the reclamation next year.

19 MR. FOX: Do not misunderstand
20 me now. What we are doing immediately is sufficient
21 reclamation work to keep those slopes where they
22 are supposed to be, and when we get the foundations
23 of the structure in place and the structure itself
24 in place, then we go in smooth off -- that road
25 will disappear. We will fill that back, taking
26 off the hump, and flattening out the lower slope,
27 and then completely rehabilitate it.

28 THE CHAIRMAN: Okay, fine. I
29 think we have that sorted out, yes.
30



1 MR. KLASSEN: Under the 1983 program
2 here in Number Three, it states that between
3 Stoney Creek and the short tunnel both cut and
4 fill slopes will be revegetated under the 1983
5 program.
6

7 THE CHAIRMAN: Okay, fine. How
8 are we for coffee for the moment? --

9 I think this might be a convenient
10 point at which to take a coffee break and we will
11 be hearing the presentation on wildlife afterwards.
12 So if you would like to join us for a coffee, and
13 if there is any questions, feel free to mingle
14 with us.

15 ---Brief adjournment

16
17 ---UPON RESUMING AT 8:40 P.M.:

18 THE CHAIRMAN: As I mentioned
19 earlier on, we are now going to have a presentation
20 from C. P. Rail concerning wildlife issues.
21 There has been a report tabled with us this
22 evening: "Concerns for Ungulate Collision Mortality
23 along New Surface Route". Following the presentation
24 by C. P. Rail's consultant, we will have an
25 opportunity for questions. There are some people
26 that may want to spend a bit of time studying this
27 report. If there is any further comment people
28 want to make at the public meeting, such as Parks
29 Canada, we will have an opportunity to do that
30 in Calgary, and if anybody wants to submit written



1 comments and feels they do not have time to do
2 that by the time we get to Calgary, we will also
3 accept those up until the end of the month.

4 Mr. Fox could I ask you to introduce
5 your consultant and the subject of wildlife.

6 MR. FOX: Thank you, Mr. Chairman.
7 Mr. David F. Hatler will submit a report or a
8 synopsis anyway on the "Concerns for Ungulate
9 Collision Mortality along New Surface Route".

10 MR. DAVID F. HATLER (MacLaren
11 Plansearch Corp.):

12 Mr. Chairman, Panel Members,
13 Ladies and Gentlemen:

14 For engineering and logistical
15 reasons highways and railways in mountain country
16 are commonly located in low lands, often in the
17 valley bottoms. Coincidentally for biological
18 and often climatic reasons wildlife often find
19 these same valley bottoms to be very important
20 areas, especially seasonally. My subject is the
21 natural and predictable conflict which arises as
22 a result of those facts.

23 Specifically in this context I
24 have looked at the potential for collision between
25 trains and moose in Beaver River Valley and that
26 area that is the subject of these hearings.

27 My study, in report form, is
28 divided essentially in three parts. The first a
29 comprehensive review of the literature to provide
30



1 (Hatler)

2 background and prospective for contemplation of
3 this potential problem. Secondly, it is the
4 report of the actual field studies which we
5 undertook during the past several months, and
6 third, a list of actions and recommendations which
7 should be considered in mitigating the problem
8 as identified.

9 There is insufficient time here
10 tonight to deal at any length with the literature
11 review other than to list some of the subjects
12 that were covered. The review itself was in two
13 parts. The first a review of moose biology.
14 Of particular interest in the context of this
15 study is consideration of factors both external
16 to the animals and internal, intrinsic, which
17 influence their local distribution. It is important
18 to understand why they are, where they are at any
19 given time as the first step -- and whether or not
20 they have any options in being in those places is
21 the first step in understanding why the conflict
22 arises.

23 The factors which appeared to
24 be particularly worth focusing on were snow cover
25 as it affects mobility and foraging opportunity
26 of the animals, food habits, seasonal movements
27 and distribution, and population dynamics.

28 The moose is a very adaptable
29 animal, particularly well designed for life in
30



PM-C

1 (Hatler)

2 northern eco systems. It has behavioural and
3 physical adaptations particularly for dealing
4 with snow but yet it is very -- in almost any
5 study of moose there will be reference to snow as
6 an exceedingly important factor in the animal's
7 biology. It is a recurring theme. Snow as it
8 affects nutrition, foraging opportunities; snow
9 as it affects, in many cases, the actual numbers
10 in the populations; snow as it affects movements;
11 and snow as it affects habitat selection.

12 The second portion of the
13 literature review concerned an actual search of
14 the literature for information for studies
15 pertinent to railway collision mortality of wild
16 ungulates. There is very little literature
17 on this subject surprisingly. The primary paper
18 on the subject is actually an unpublished document
19 from Alaska written in the mid-fifties. A recent
20 study by a consultant commissioned by the Federal
21 government studied transportation mortality in
22 Canada's National Parks. That particular study
23 was oriented primarily to highways but there is
24 some railway information there as well.

25 The subjects which were covered
26 in this look at the literature relating to railway
27 collision mortality included the extent of the
28 problem, and just to give some examples: in the
29 Alaskan study which I mentioned -- in the winter
30 of 1955-56 a minimum of 425 to 450 moose were



1 (Hatler)

2 killed on the section of railway, the Alaska
3 Railway between Anchorage and Fairbanks. There
4 have been many reports in recent years in the last
5 decade of 200 to 300 animals being killed on the
6 C.N.R. line between Prince Rupert and Jasper. In
7 1968 it was a particularly bad year and it
8 was estimated up to 600 moose were killed on that
9 section of line.

10 Within the literature review
11 I have covered some aspects of the nature of the
12 problem describing how it comes about. Again with the
13 effects of snow there is a very definite
14 correlation. The years of highest kill are almost
15 always the years of very high snowfall, and this
16 goes for all species not just moose.

17 The distribution of kills in
18 railway mortality there tends to be a clumping in
19 areas where animals are killed regularly, and
20 large areas where they are not killed, this suggests
21 that there is more likely to be an ability to
22 mitigate some of these problems since they seem to
23 be local. That clumping of kills is almost
24 certainly related primarily to the fact that the
25 animals are distributed that way primarily along
26 valley bottoms, and where the railway or whatever
27 disturbance comes closest to those areas that
28 they select during that time period will determine
29 where the clumping occurs.
30



PM-C
1 (Hatler)

2 Time of day is a factor in
3 railway mortalities. In the Alaskan study which
4 is the only really detailed study where they were
5 determining a variety of factors, and they had
6 people riding the trains looking at train-moose
7 interactions. They were out on the rail line
8 weekly looking at carcasses, taking them apart,
9 so that it is the most complete to date, again in
10 the mid-1950's, and it was quite evident that
11 more were killed at night than during the day,
12 and substantially more.

13 Section H Composition of Railway
14 Kills, another subject. There was no correlation
15 in the Alaskan studies. Animals were killed
16 pretty well in relation to their occurrence in
17 the population.

18 Behavioural aspects, there were
19 two or three references dealing with what actually
20 happens when a moose and a train are lined up together.
21 I myself have ridden the cab of an engine and have
22 seen that. It might be worth mentioning here
23 that in the Alaskan study 101 such interactions
24 were observed, and in approximately 20 per cent of
25 those interactions the moose actually was killed.
26 So that they do escape most of the time but occasionally
27 they do not.
28
29
30



1 (Hatler)

2 Effects on populations. In most
3 cases even if we had the very best mortality information
4 we often do not know the living population and that
5 is hard to make that step of determining just what
6 that mortality means to the population, but we will
7 talk about it a little bit in relation to the
8 Glacier situation.

9 What the literature review tells
10 us is that railway collision mortality of large
11 wild ungulates certainly does occur and in some
12 areas sometimes it can be that relatively large
13 animals can be lost in a very short time. The
14 implications for such populations are obvious.
15 There are also implications for the railway. I
16 came across one reference to a front page article
17 in the Prince George Citizen of January, 1974,
18 which described three C.N.R. derailments in
19 three days all as a result of collisions with
20 moose.

21 The general problem is clearly
22 very real but as I indicated earlier only minimal
23 attention has been received by researchers and
24 managers to date on it.

25 Now to the specifics of the
26 Glacier National Park situation. Our studies
27 focusing on the problem specifically were primarily
28 in the form of monthly field trips from December,
29 1982 through to April, 1983. They involved
30 intensive helicopter surveys on each of the field



(Hatler)

trips with complimentary ground observations as appropriate. We also had supplementary information from other studies prior to that general study period. I will not go to any great detail on methods beyond that. You will find it in the report.

The first item that I will talk about relating to the Glacier Park moose is our ultimate count of the numbers and composition of the sub-population that occupies the Beaver Valley. Moose apparently arrived in that general area, in the Glacier Park area, in the early 1930's. They were not there prior to that time. Much of B.C. at that time was being colonized. Much of northern B.C., which I am familiar with, the moose were just arriving in that area as well.

They have never been intensively studied in Glacier and are not regularly surveyed. In the synthesis of all of our various counts and walks through the area, we arrived at a minimum population, sub-population in the Beaver Valley of ten animals. This was one large bull, one small bull, three females with calves and two adult females without calves. We saw no obvious yearlings in that amongst those ten suggesting that previous years total production had been lost, and there is some evidence that the winter of 1981-82 was a very severe winter. So that is maybe part of the explanation.



1 (Hatler)

2 Now we did see as well or accounted
3 for a minimum of five other animals in Glacier
4 Park but outside of the general study area. So
5 we saw ten in intensive study within the study area,
6 a minimum of five in the areas adjacent. The
7 relationship of those particular animals to the
8 Beaver Valley population is now known but it
9 suggests that it is not a closed population in the
10 Beaver group.

11 A few comments about the ecology
12 of moose in the Beaver Valley. Obviously, one
13 winter study is not going to tell us everything.
14 The description of the local ecology of any
15 species can only be accomplished by detailed
16 observations over several annual cycles, but again,
17 we come down in considering the ecology of moose
18 in Glacier National Park to a consideration of
19 snow and all the brochures on Glacier and Mount
20 Revelstoke National Park emphasize snow as being
21 a dominant and major feature of the whole park
22 situation in this area.



D-I
BN-bn

1 (Hatler)

2 We did get some weather information,
3 particularly snow pack information from the Glacier
4 Station, which did confirm that the 1981-82 winter
5 was a colder winter with much deeper snows than
6 the 20 year average for the area, and the most
7 recent winter, the winter of our studies, the 1982-83
8 winter was warmer than normal and with considerably
9 less snow.

10 We found in April of 1982 in a study
11 which was not part of the present operations, but we
12 were still looking at moose in the area, we found
13 two carcasses of winter-killed animals following
14 that severe winter. We saw none in all the
15 intensive studies this year.

16 Now, an important point about these
17 snow figures, the peak snow depth in the severe winter
18 was around 210 centimeters; last year it was around
19 140 centimeters. A review of all the studies on
20 moose that have dealt to any degree with snow suggests
21 that the critical level for moose is 80 centimeters.
22 So even in the very mild year this year, we are
23 dealing with an exceedingly heavy snow fall situation
24 that the moose in that area have to contend with.
25 Again, I have had a lot of experience with moose in
26 northern areas. I have never seen moose contend
27 with snow like they do in Glacier. They do not walk,
28 they swim. They do not touch bottom in their tracks
29 during parts of the year until the snow consolidates



D-2

1 (Hatler)

2 sufficiently.

3 They are restricted for very long
4 periods to very small areas and we found small
5 cedars that were almost totally denuded of the
6 bark. They are not subsisting in high style but
7 they make it.

8 Our observations, both summer and
9 winter, indicated in an absolute sense there is a
10 lot of food available in Glacier Park, but much of
11 it is unavailable during that critical winter period
12 because of their inability to travel long distances
13 to obtain it. In the interest of keeping the
14 time period for the presentation down, I will not
15 deal at any length with the food observations other
16 than to indicate that we did follow the new right-
17 of-way prior to clearing and there was very little
18 sign of moose use at that level of the Valley prior
19 to the clearing. There was some, but almost no
20 browsing especially in areas where there was heavy
21 browse potential, and only an average of 1.1 moose
22 days of use along the whole line. That is based on
23 droppings, and studies in Alaska indicate that they
24 defecate about 17 times a day if any of you would
25 like to pocket some nickel knowledge.

26 Seasonal movements. It seems
27 apparent that the moose which wintered in the Beaver
28 Valley had not moved far from their summer range.
29 I do not believe that the animals are strongly
30



D-3

1 (Hatler)

2 migratory in that area, and in fact I think there
3 are compelling reasons why they should not be.

4 In terms of distribution, the
5 Mountain Creek area is certainly the area of greatest
6 activity during the winter period, and of the ten
7 animals which I mentioned as our minimum population,
8 approximately seven of them occurred at some time and
9 five of them almost all the time in the vicinity of
10 Mountain Creek, from that down to the pusher station.

11 It seems likely that it can only be
12 discovered by marking animals, that most directional
13 seasonal movements in the Beaver Valley are parallel
14 to rather than perpendicular to the river.

15 Railroad collisions in the Beaver
16 Valley. The data compiled in the study while I
17 mentioned earlier regarding the transportation
18 mortality of wild ungulates in Canada's national
19 parks indicated that for the four parks which have
20 railways within their boundaries, train kills
21 represent from about 10 to 30 percent of the
22 transportation-related mortalities recorded.
23 Glacier is on the low or ten percent end of that
24 range. The figures from that report average out to
25 about 58 reported railway kills per year in those
26 four parks, of which about ten percent are moose,
27 and the average for moose kills per park ranges from
28 0.3 to 3.2 animals per year. The 0.3 figure is
29 Glacier; 3.2 is in Banff.
30



D-4

1 (Hattler)

2 While these figures would seem to
3 be insignificant, they may be somewhat misleading
4 in that the actual total kill in at least some of
5 the areas is probably less than the reported kill --
6 or the actual kill is larger than the reported
7 kill in at least some of those areas. The ten
8 year average may mask the importance of the kill in
9 any one year, and finally, the kill could be
10 important out of proportion to numbers if for some
11 reason some particular sex or age class was
12 selected in the kill, some behaviourally important
13 individuals, for instance.

14 Only three moose kills are known
15 to have occurred on the existing rail line adjacent
16 to the Beaver Valley since at least 1970. That is
17 in the past 13 years, and there appears to be
18 no reported kills on that line since at least 1979.
19 Those three all occurred in early winter, one in
20 November and two in December, and this would be while
21 the snow is building up to that critical level.
22 They are still quite mobile at that time. After
23 the snow restricts their movements, they are
24 certainly less vulnerable because they are not
25 getting out onto the area where they would be hit.

26 The new rail line being lower down
27 the slope and therefore closer to the primary moose
28 activity in the Valley may well have the potential
29 for more frequent conflicts with moose than the
30



D-5

1 (Hatler)

2 existing line, but most of the problem seems to have
3 occurred on the Mountain Creek, and there the
4 difference is slight. In fact, not far down below
5 Mountain Creek the two lines come together.

6 Our observations indicated fairly
7 little use of the cleared right-of-way during this
8 past winter. There were in December, two animals
9 did cross the new right-of-way and moved up the slope
10 as far as the existing track and then meandered back
11 down again. Later in the winter, I believe it was
12 in February, one bedded down on the new right-of-way
13 for a short period, but most of the activity was in
14 the Valley bottom again.

15 Possibly, if the new right-of-way
16 had a rail bed and were plowed and the animals gained
17 access that they would travel along it more. They
18 move relatively little now primarily because under
19 normal circumstances they cannot; if the opportunity
20 presents itself, they will.

21 Impacts on the population. As I
22 indicated earlier, the degree to which the moose
23 observed in the Beaver Valley constituted closed
24 population this is not known, but it seems likely
25 that there is some input and also some animals
26 leaving from the outlying animals which we have
27 seen. So it is probably not a closed population.
28 The chances for recruitment from elsewhere do exist.
29 However, it also appears that because of the snow
30



D-6

1 (Hatler)

2 situation, that animals tend to be quite sedatary
3 in the area.

4 Our -- I guess I should say my
5 feeling is that it is probably best to take the
6 worst case situation than to suggest that any input
7 from the outlying area is a bonus and consider that
8 sub-population as closed for the purposes of the
9 discussion.

10 Certainly, the Beaver Valley
11 population is of considerable importance to the
12 Park in the context of being adjacent to the travelling
13 public.

14 Let us talk again about the mortality
15 of the animals and the viability of this population.
16 The information that we were able to come up with
17 indicated that between 1962 and April 1982, a 20
18 year period, a total transpotation-related mortality
19 of moose in the Glacier Park area was 33 animals,
20 of which 27 were killed on the highway and six on
21 the railway. The addition of two highway-killed
22 male calves to that list in the fall of 1982 last
23 year raised the total to 35.

24
25 The average is less than two per
26 year, but again, what can we do with averages. It
27 seems apparent that a minimum of seven animals died
28 between October 1981 and the same time the following
29 year. In a population of what we now consider to
30 be a minimum of ten, clearly a population cannot



D-7

1 (Hatler)

2 sustain that kind of mortality for very long.

3 More importantly, if in fact
4 there are only two bulls in that area, the loss of
5 those two could temporarily arrest local recruitment.

6 Much of the focus on the railway
7 problem is on mortality but it should be mentioned
8 that other impacts are possible. Occasionally moose
9 run long distances ahead of speeder cars or trains
10 and especially during the winter period when they
11 are on marginal or negative energy budgets, this can
12 be very detrimental. They can die or become
13 vulnerable to other mortality factors just from the
14 physiological stress involved.

15 It is apparent to me that to ensure
16 the continued viability of the Beaver Valley
17 sub-population of moose, it will be essential to
18 both reduce the present rate of highway mortality
19 and prevent excessive increase of direct or indirect
20 railway mortality. My mandate here was only to
21 address the railway aspects, but certainly it cannot
22 be enough. The highway problems by far the greater
23 is probably increasing with the increased traffic
24 flows.

25 Finally, we come to the suggested
26 mitigation measures and these have been covered
27 in sort of a systematic way. What I want to do is
28 just refer to them with the background information
29 that we have on what actually is going to be going on.
30



D-8

1 (Hatler)

2 One of the facts that has to be
3 brought out is that we cannot mitigate a particular
4 problem without clearly understanding the problem,
5 and again, the railway mortality situation is not
6 something that we have in hand. The Alaskan studies,
7 again, as I have indicated, documented a number of
8 different types of problems, different types of
9 circumstances, which led to mortality.

10 In the Glacier area, we have only
11 a minimal amount of information, primarily from
12 skiers since people have begun to take
13 records in the area; the bit of intensive work that
14 we have done this year, but we certainly do not know
15 for sure what migration routes, if any, exist, what
16 areas are really the greatest potential problem.
17 For this reason, I cannot recommend any particular
18 mitigation structures, no particular fences or
19 underpasses or overpasses, things of that nature
20 in that there is just inadequate information to
21 place them properly in any particular place. There
22 are areas certainly where we can predict that we
23 are more likely to have a need for such structures than
24 others. But more information is going to be
25 required.

26
27 The question of whether or not all
28 animals killed are reported comes up in any
29 consideration of the railway moose mortality
30 problem. There does not seem to be any real future



D-9

1 (Haller)

2 in getting into the argument of whether or not it
3 occurs. Certainly reporting is a necessity and
4 that is probably my major recommendation, is that
5 a system which is very simple, requires only a phone
6 call and say, hey, we killed a moose today which
7 will enable the appropriate people, probably from
8 Parks, to get out and look at the animal, to look
9 at the circumstances by backtracking and certainly
10 that, in itself, is not enough either because again,
11 the frequency of kills appears to be so low that
12 it might take 30 years for the next three kills.
13 But sightings of moose and of the sign that they
14 make is certainly available and regular patrols
15 by someone is certainly going to be a necessity
16 to determine the areas of the greatest moose
17 activity other than Mountain Creek, which I think
18 everybody can right now agree is the area of greatest
19 concern.

20
21 Mountain Creek is again where the
22 three most recent railway kills have occurred, one
23 in 1973 and two in 1979. It is an area where many
24 of the highway kills appear to occur. It is the
25 area where we documented most of the moose activity
26 during the winter period.

27 Some of the other recommendations:
28 the vegetation along the right-of-way can sometimes
29 be a problem. If the reclamation or the
30 revegetation of the area in certain areas is grown



D-10

1 (Hatler)

2 back to plant species attractive to moose, it could
3 draw them in. I think that does not have to be
4 a problem in this case because of the nature of
5 the terrain. Mountain Creek, again, is the area of
6 primary concern.

7 Manipulation of train speed was
8 found in the Alaskan studies to be one of the most
9 important things that could be done. There were two
10 adjacent areas; the area with the most moose had the
11 fewest kills because in that area terrain required
12 that the train travel only 30 miles an hour or less.
13 In the adjacent area the train was up to 50 miles an
14 hour and they killed more moose. Now, in this
15 particular area I understand that on the new right-
16 of-way we are dealing primarily with uphill traffic
17 and the train speed there is to be somewhere around
18 15 miles per hour. It seems like already that is
19 an advantage for the moose.

20 Manipulation of horns and headlights,
21 something that was tried in Alaska. There was some
22 indication that if the horn blast was timed
23 properly, primarily, in fact, if the horn blast was
24 withheld until the last minute that the moose would
25 get off the track and would be saved, whereas
26 frequent horn blasts from the time the animal is
27 first seen can be detrimental in a number of ways.
28 Sometimes it can make the moose mad and there are
29 observations on record where the moose turned around
30



D-11

1 (Hutler)

2 and charged the train. There is also the problem
3 of the animal realizing that something is coming,
4 getting off the tracks, finding that the snow is too
5 soft to run in and then going back to what he thinks
6 is security of the solid track bed. And I suspect
7 that there are train crews out there who have tried
8 various things and who know what to do, and I would
9 like to see some way of communicating with these
10 people in a systematic way to get the best kind of
11 information of that sort that we can get, train and
12 safety control in that way.

13 Snow removal is a very important
14 thing to be done. Obviously snow removal is part
15 of the track maintenance, and I suspect in this
16 case, particularly along the steep slope south of
17 Mountain Creek -- and I refer to west as south
18 because that is what it is on the map, so that is
19 what I am referring to -- there the snow will be
20 thrown over the side repeatedly and a berm is
21 going to build up there that is going to be hard
22 to get up through from below. So that probably will
23 help.

24 Encouraging use of areas away from
25 the track. Now, this is something that has not
26 been tried, I do not believe, in any detailed
27 fashion, but to me it may be the thing that will
28 save the day in the Mountain Creek area. This is
29 not only for the railway, this is for the highway
30 as well.



D-12

1 (Hatler)

2 The animals there have access to
3 the highway and to the railway by the existing
4 trails and I believe that if trails were packed by
5 snowmobiles or small tracked vehicles farther
6 downstream, staying on the side of the river
7 opposite the railway, that it would attract and hold
8 animals, those few that occur down in that area, in
9 those areas rather than drawing them up onto the
10 tracks. Now, I have made some suggestions as to
11 how that could be done, what some of the concerns
12 would be, but it is something that I think ought
13 to be tried.

14
15 I think probably at this point it
16 would be best to close it and ask for questions.

17 THE CHAIRMAN: Thank you for a
18 very interesting dissertation. I guess I have a
19 question and maybe it will throw things open.

20 You were talking primarily about
21 moose. I notice the title of your report was
22 ungulates. Did you run into any other sorts of
23 ungulates or was moose the only one you found that
24 you could deal with?

25 MR. HATLER: Well, moose are
26 certainly the primarily concern there. We saw
27 three elk in April which had just come down the
28 river and they certainly did not occur along the
29 rail line at all during the past winter.

30 We found droppings on two occasions



D-13

1 in the area of the new right-of-way near Stoney
2 Creek. But there is certainly no established
3 population as such and nothing that really can be
4 addressed, and there are deer in the area but
5 infrequently. We did see mountain goats in the
6 vicinity of the existing Stoney Creek tressel but
7 no indication that they got below that.

8 THE CHAIRMAN: Any questions from
9 anybody in the audience concerning this presentation,
10 any wildlife people present?

11 Panel, any questions? Bill Ross.

12 MR. TENCH: Is this report just
13 as recent as now? Have C.P. Rail or Parks Canada
14 had a preview of the contents? Is it fair to
15 ask a few questions on what either party would do
16 under certain circumstances?

17 MR. FOX: We have reviewed it in
18 the Calgary office last week, Mr. Tench.

19 MR. TENCH: Have Parks had a chance
20 to see this, and the question I would ask is this
21 method of creating tracks by artificial means, have
22 you given this any thought, and if you have, how
23 would you go about it and who do you think should
24 pay for it?

25 MR. GALLACHER: Well, we have not
26 reviewed the report at all. We just received it
27 tonight, but we will be reviewing it and we will
28 have a letter to the Panel by the end of June.

29 As far as making tracks to guide
30



D-14

1 the moose along the Valley bottom or the slopes,
2 we do not make it a practice using the snowmobiles
3 in the Park for the simple reason it disturbs the
4 animals. So consequently, the cure may be worse
5 than the disease, so to speak. I think we would
6 have to be very careful there.

7 But we will certainly look into it.

8 MR. TENCH: Have you had any
9 experience before of this artificial track making
10 being put into effect?

11 MR. HATLER: Well, I have made a
12 lot of artificial tracks with my own snowshoes in
13 the last year. I do some trapping and I have used
14 snowmobiles, and the animals do tend to follow those
15 tracks regularly, both deer and moose in the area
16 that I am working in, and caribou certainly like it
17 as well. Again, it is the path of least resistance,
18 and during the time of year when they are trying
19 to conserve energy and they have not -- in most
20 cases they cannot consume enough forage of sufficient
21 quality to even maintain. They are losing all
22 winter long, so that anything they can do to conserve
23 energy they will, and I suspect that this tracking
24 that I am suggesting, if done -- and it is something
25 that should be done by people who know the habits
26 of the animals and who can do it sensitively enough
27 not to disturb them and you do not want to do it
28 in the same place each year because, you know, you
29 are going to be exploiting the vegetation by the
30



D-15

1 moose in those different areas.

2 So that there is a fairly large
3 area to work with there, some of which is outside
4 the Park, but the moose that are working in that
5 area outside of the Park are part of the Park
6 population. So I do not think there would be
7 any danger to the animals. I think that if it worked
8 it could only be positive.

9 MR. TENCH: In your review, Mr.
10 Fox, have you looked at this provision of vegetation
11 in areas adjacent to it? Have you had the chance
12 to talk this over with your other consultants?

13 MR. FOX: Yes, to a degree, and
14 our soil or reclamation expert does have some concerns
15 because naturally he wants to get vegetation to grow
16 on those slopes, but we really have not come to
17 a conclusion at this time. It has got to be looked
18 at.

19 MR. TENCH: Is it possible you could
20 do this in time for us to get some information on
21 this subject back before we get to writing the final
22 report?

23 MR. FOX: I would think that should
24 be possible, Mr. Tench, yes.

25 THE CHAIRMAN: I wonder if I could
26 ask whether some of the revegetated areas would
27 in fact or could in fact act as an attraction for
28 the moose. I am not sure whether you are familiar
29 with the sort of grasses and so on that is being
30



D-16

1 proposed. Could you see that potentially as being
2 a problem, that a nice, fresh grass area is growing
3 and this moose coming home to graze on that particular
4 area?

5 MR. HATLER: No, I do not think that
6 the grass would attract them much. They do utilize
7 that kind of forage occasionally, but they use
8 other things more often, and certainly in the
9 wintertime when the main problems occurs, that is
10 going to be under the snow.

11 That particular problem, you know,
12 it is just one that was mentioned, it is one that
13 has been a problem in other areas because the natural,
14 successional cycle has brought in a lot of forage
15 for the animals that they did not have before and
16 they are travelling along the entire line.

17 Now, in this particular case,
18 we recognize it as a conflict arising from two
19 different requests, one, protect the moose, one,
20 protect the scenery, and decisions have to be made on
21 this. My own feeling, you know, I mention it because
22 I think it has to be mentioned but I do not think
23 that the moose problem is that great that it has
24 to supersede the other.

25
26 The Mountain Creek area is the
27 most sensitive and there my understanding is that
28 most of the plants that they expect to reclaim
29 are not attracted to moose.

30 THE CHAIRMAN: Then you would not



1 want to be planting the sort of things that might
2 attract the moose, though?

3 MR. HATLER: Pardon me?

4 THE CHAIRMAN: You would not want
5 to be planting the sort of plants that would attract
6 the moose particularly?

7 MR. HATLER: Well, in some areas,
8 if those are the best ones from a reclamation point
9 of view you might have to.

10 THE CHAIRMAN: Have you and the
11 reclamation people talked to come to some mutual
12 agreement on what is acceptable to both of you?

13 MR. HATLER: Again, my place is
14 only to indicate that that could be a problem if
15 it was a continuous type of situation or if it were
16 placed in a -- I do not think that the plants are
17 going to attract the animals from long distance.
18 It is only if it is a continuous band, which it is
19 not likely to be.

20 THE CHAIRMAN: The sort of thing
21 I would have in mind is if you have got a right-of-
22 way, a nice path for the animal to go along and nice
23 areas to feed off on either side, it might tend to
24 be attractive.

25 MR. HATLER: Yes, this is why I
26 would suggest it is important to not invite them at
27 Mountain Creek.

28 MR. TENCH: Question for Parks.
29 This is getting desperately close to winter feeding
30



D-18

1 by artificial means, perhaps. Is this going to cause
2 you any concern?

3 MR. McKNIGHT: Mike McKnight. Is
4 it going to cause us any concern as ---

5 MR. TENCH: As a policy, you, Mike,
6 mentioned today that Parks did not go for issuing
7 bales of hay to elk and this sort of stuff. We
8 are possibly getting close to doing this very thing
9 by planting special areas for them. Would this cause
10 you any concern that you see at the moment? I
11 realize you have not had much time to think about
12 this, but if you want more time to think about it,
13 if you would cover it in your letter.

14 MR. McKNIGHT: No, that is fine.
15 It is certainly a concern that is arising now
16 at Lake Louise where we have now a wintering population
17 of elk right along the right-of-way and that is
18 primarily because some of the grasses are starting
19 to establish themselves fairly well.

20 With the moose thing, I am not sure.
21 I think that the snow depths in the area would
22 almost preclude attracting the moose to the right-of-
23 way for at least a goodly number of years until those
24 plants had established themselves to the point where
25 they were able to grow above the snow line during the
26 winter.

27 The summer attraction I would doubt
28 because I think there is much more favourable
29 habitat available in the Valley bottom.



D-19

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MR. TENCH: Thank you.

MR. MCKNIGHT: While I am up I have one more question. When we did a lot of the wildlife work in Banff National Park, we identified the alluvial fans of a lot of the rivers as being very important wildlife habitat, and one of the concerns that I had and we have discussed with the wildlife people was that the new rail line bisects a number of streams and it is right along the top of those alluvial fans. I am wondering whether your observations indicated that those fans were important to the moose and our concern was that we were building a very inviting pathway from one fan to the next and would we be really encouraging the moose to make more use of those fans and thus be subject to considerably more mortality than we are presently experiencing because the original line is much higher.



MR. HATLER: Yes, I indicated

1 that I had -- that there were some areas that we
2 could predict would be more likely to be problem
3 areas than others when I was briefly mentioning
4 fences and such things, and I have as one of the
5 figures in the report a sort of a diagram of
6 possible fencing requirements in the future, and
7 in this case it is not a continuing fencing but
8 it is short leading fences on each of those
9 areas of deciduous growth, and again I would say
10 that it is only appropriate to consider using
11 those with more information. But certainly those
12 are the areas where (a) you can see the activity
13 because it is deciduous. You fly over the cedar
14 and you cannot see into it and you walk through it
15 and it is much more compact but there is an
16 indication that the animals are using that, the
17 coniferous areas as well, and perhaps in this
18 environment more than we would expect but I do agree
19 from all my background that it is always those
20 deciduous areas that seem to me to be important,
21 and that if I am tune with the moose that is the
22 way it is.
23

24 MR. MCKNIGHT: Our observation --
25 we skied along the right-of-way during the winter
26 on two or three occasions and we would go down the
27 creek drainages, and we were certainly aware of
28 much more moose activity just in those fans, and
29 as I say, the concern is that we are building a
30 very nice travel route, a very convenient travel



1 route and quite close to the --

2 MR. HATLER: Yes, but most of
3 the use of the fans is on the lower areas. They
4 do tend to meander up and then back and forth on
5 those areas, and they certainly do use them but the
6 existing line crosses all of those fans as well.
7 Certainly at a higher level --

8 MR. McKNIGHT: It is much higher
9 that I wonder whether the energy expenditure
10 necessary to climb up to that line in order to be
11 able to make it up --

12 MR. HATLER: It is still pretty
13 high where they are. It is high at both places
14 but there is certainly a possibility.

15 MR. McKNIGHT: It is a concern
16 and we will have to be aware of it.

17 MR. HATLER: Those are the areas
18 that I have suggested need watching.

19 DR. ROSS: I think I would like
20 to have a closer look at the document before I
21 have some questions on it. You will be in Calgary,
22 will you, Mr. Hatler?

23 MR. HATLER: I was not planning
24 to be but that may be changed.

25 DR. ROSS: At this time the only
26 question I have, I guess, is to Mr. Fox, and that is
27 you have indicated in your Red Book, if one might
28 use that term, that there are a number of mitigative
29 measures to which you are committed. I do not
30



1 recall which of these were mentioned in there or
2 did this document come too late for inclusion.
3 More to the point: which of the mitigative
4 measures proposed in this document by Mr. Hatler
5 does C. P. plan to implement at this time?

6 MR. FOX: Well, first of all the
7 train speeds there are very, very low. So
8 certainly that is no problem for us. Insofar as
9 snow build-up, we can certainly handle the down
10 slope side quite easy with the use of spreaders,
11 which we use every year -- it is just a matter of
12 kicking a wing out and we can kick that snow right
13 off the top of the rail bed down the slopes except
14 in one cut, which is at Mountain Creek. So that
15 is an easy thing to do and really what that says
16 is that if the moose does get on the right-of-way
17 he does have a way of escaping without getting into
18 horrendously deep snow. You know, as soon as he
19 takes a few steps he is going to be in, but whether he
20 can get back up that slope again that is perhaps
21 a good question.

22 The use of horns and headlights,
23 although I guess all you can do is trial and error.
24 Certainly right now our crews use a series of
25 whistle blasts when they see wildlife on the right-of-
26 way and whether they blow too soon or blow it at
27 the right time, I really cannot answer that and I
28 guess we would have to do an awful lot of experimenting
29 just to see what is the right way to do it if that
30 is of any help. It could be that we could make



1 a survey of our crews and see what we can get out
2 of that survey. Some might indicate that if
3 you are within -- I generally go by pole lengths,
4 which is roughly 140 feet, and if you start blasting
5 your whistle then they might get out of the way and
6 stay out.

7
8 As I say, I do not know. We
9 could try to find out. I do not know that you
10 would get any conclusive evidence on that. There
11 perhaps would be so many opinions, particularly
12 from the crews in this particular area, because
13 I do not think they see that many moose. We could
14 probably look at other territories where there
15 are more animals of that type and see what the
16 experience is in those locations.

17 DR ROSS: In particular, were
18 you planning to implement this reporting mechanism
19 which is --

20 MR. FOX: We already have in
21 place a reporting mechanism for kills. We do not
22 have a mechanism in place for sightings and I rather
23 doubt that we would want to take that on because of
24 a number of things, and the first one is that you
25 will not see them from the tail end of the train,
26 that is for sure -- they will be gone by the time
27 the tail end arrives on the scene. The head end,
28 particularly the engineman, he has got enough
29 responsibilities now insofar as that train is
30 concerned. To make your sightings worthwhile he would



1 have to note the -- well, not the précise
2 location but certainly the location where he
3 saw these animals and whether they were north or
4 south or whatever of the track to make any
5 reporting worthwhile in my opinion.

6 The main problem I have there is
7 that that fellow is a pretty busy man up there
8 watching his train and watching his train orders
9 and signals and things of this nature and I do
10 not think I would want to suggest to them that
11 they would have to take on a task such as this.
12 Then, of course, a telephone call is great but that
13 is not the way it works in this world. He would
14 have to submit a piece of paper and the piece of
15 paper would have to go to somebody else and so
16 on down the line before it got to Parks Canada,
17 and I imagine they go through the same procedure.
18 So I do not know if that would work too well.

19 Certainly insofar as in the future
20 if we found that the population of moose was such
21 that they were getting on to these fans that have
22 been referred to up on the rail lines, we can
23 follow that and if a fence or some kind of a
24 training fence is what is required, we could
25 certainly take a look at that, but right now we
26 do not know where to put them or what to do with
27 them, or even if they are necessary

28 THE CHAIRMAN: Any questions
29 from the members of the audience on this particular
30 point?



1 Is there anything final that
2 C.P. wants to add on this point before we go back
3 to questions on a more general nature?

4 MR. FOX: I do not think so,
5 Mr. Chairman.

6 THE CHAIRMAN: Do we have any
7 questions from members of the audience -- anything
8 general that has come up this evening?
9 If you would like to come up to the microphone
10 and identify yourself?

11 MR. JULIAN DUNSTER (Ministry of
12 Forests, Golden): First of all, I would like
13 to ask C.P. Rail, Mr. Fox, about the power lines.
14 We have been dealing with B. C. Hydro for a number
15 of years now to clear a right-of-way from Invermere
16 to Golden, and we have always been under the
17 understanding that the take-off would be, I think,
18 a 69 KV line from that sub-station to be used
19 for this project, and the right-of-way is now
20 established, and I have heard from B.C. Hydro
21 that the project is deferred. There was no reason
22 given as to why it was deferred.

23
24 It is a little urksome to me as
25 a forester that we have cut out a right-of-way for
26 several -- I do not know how many miles, but
27 there is a significant loss of productive land for
28 no particular reason right now, and my question to
29 C. P. Rail is why have they -- I guess I cannot say
30 misled B.C. Hydro, but why have they always gone



1 under that assumption and then they changed
2 at the last moment?

3 MR. FOX: Well, first of all
4 your information that the line was being built
5 for C.P. Rail's account is not correct. The line
6 was being built strictly for B.C. Hydro's account,
7 and we asked when it was going to be built and
8 if we could get power from that source. And to
9 fill you in on the whole story, so you know the
10 whole story -- you see I personally went and met
11 with the B.C. Hydro officials in Vancouver last
12 fall, and tried to determine when that particular
13 line was to be built, and it was not going to
14 be a 69 KV line; it was something of the order of
15 200 and some KV -- 240, it was a very heavy line.
16 The requirements insofar as B.C. Hydro was concerned
17 for power in this area told them that they do not
18 need the line. Now they were quite willing for
19 me to put up \$20 million and build it for them and
20 I can bring power in for a hellva lot cheaper
21 from Revelstoke than build a line for B.C. Hydro
22 and have them collect money. So as far as I am
23 concerned, they couldn't deliver the power for me,
24 and if they cannot deliver the power, I cannot
25 use it. So I have to go where I can get it and
26 that happens to be Revelstoke. So that is a
27 correct story.

28 MR. DUNSTER: Okay, that puts
29 B.C. Hydro back into the position of being public
30 enemy number one, I guess.



1 MR. FOX: Well, that was
2 in the works long before we requested power.

3 MR. DUNSTER: Well, the problem
4 is you cannot get a straight answer from B.C.
5 Hydro ever or half the time anyway.

6 Okay, my second question is not
7 as a Ministry person but just as a professional
8 forester. I am a little concerned that there
9 has been a lot of work done on this ventilation
10 shaft and the visual looks very good. Obviously
11 you have done your homework there and it is fairly
12 well camouflaged in its present site.

13 I do not know whether you are
14 aware but in this area we have several nasty
15 little beasts which go around eating trees of
16 which one is the spruce bark beetle, and the spruce
17 bark beetle has wiped out a significant amount of
18 timber in Quartz Creek, and Quartz Creek is maybe
19 five, ten miles I would say from the eastern
20 boundary of Glacier National Park. If, or perhaps
21 when the spruce bark beetle starts to migrate
22 westward, are there any measures built into those
23 whole process to cope with the event where the
24 spruce bark beetle would devastate the spruce
25 forests around that ventilation shaft and thus
26 exposing it? Is there anything built in to deal
27 with such a contingency?

28 MR. FOX: Not as far as I am
29 concerned. Your spruce bud worm or whatever it is
that you call it is no concern of mine really. I guess



1 it is the concern of the people who look after the
2 forests in this country, I would think.

3 MR. DUNSTER: Okay, but we are
4 in a National park so it is not under the
5 jurisdiction of the B.C. Forest Service.

6 MR. FOX: Well, it is under
7 the jurisdiction of Parks Canada and I guess you
8 should direct your question to them, because
9 I certainly cannot help you on the spruce bud
10 worm.

11 MR. DUNSTER: Perhaps Parks
12 Canada would like to comment on it.

13 MR. GALLACHER: We realize
14 the investigation is there and we have brought
15 this up with our people in the region, a chap
16 by the name of George Rogers, who is our Chief
17 Forester, and he has it pretty well in hand. He
18 makes periodic visits to the area and he has sent
19 some experts out to check the areas out in Mountain
20 Creek campground, in particular. I believe he
21 also dealt with some of your people from the
22 Revelstoke area.

23 MR. DUNSTER: Okay, on that
24 subject I would like to suggest that the Panel
25 maybe take the time to evaluate some of the measures
26 that are taken by the B.C. Forest Service or a
27 service anywhere else in Canada to deal with the
28 spruce bark beetle, and ensure that such logging
29 operations that C.P. carries out, that clean-up
30



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1 and sanitation is carried out to the same standard
2 to avoid furthering that epidemic, which is fairly
3 close right now.

4 MR. FOX: What is it that you do
5 with these little insects? Do you spray for them
6 or what do you do for them?

7 MR. DUNSTER: I do not know.
8 I do not think you would get away with that in
9 Glacier Park.

10 MR. FOX: What are you doing now?
11 You say you have got a problem.

12 MR. DUNSTER: Basically where
13 possible we are trying to salvage the timber but
14 we also have a trap tree program whereby you
15 deliberately put out a baited tree for the
16 beetles and then when the beetles are in it, you
17 pull the tree out and take it away, but to start
18 with before you have got the epidemic there, if
19 you can do really thorough sanitation of all the
20 logging and not leave high spruce stumps, not leave
21 any spruce slash in the area, then you will not
22 get -- for a while at any rate, you will not get the
23 beetles migrating into the area.

24 MR. FOX: We hope we can burn
25 everything if we can get a permit to burn it.

26 MR. DUNSTER: I was just curious
27 to know what is happening because it could be a
28 major problem.
29



1 DR. ROSS: I am not sure I understand.
2
3 What you are suggesting is there some particular
4 measures in clearing and handling this slash in
5 spruce trees that would, if not preclude, at least
6 significantly reduce the prospect of the spruce
7 bark beetle of penetrating into the area and
8 devastating the forest?

9 MR. DUNSTER: Yes, it is
10 something we are trying to encourage the licencees
11 to do is a very thorough mop-up of the harvesting
12 operations. One of the reasons that Quartz Creek
13 had a spruce bark beetle epidemic was that the
14 slash was not burned and we had some particularly
15 high stumps after a winter logging show, and that
16 caused the spruce bark beetle to come into the
17 high stumps and then it just took off. It was
18 a population explosion. So it is just something
19 which could be done during the part of routine
20 operations.

21 MR. FOX: Well, that is always
22 done when you build a railroad. You take out all
23 your stumps on the right-of-way and burn them, and
24 your slash is burned too. Now and again we have
25 trouble getting rid of logs but ---

26 MR. DUNSTER: I guess all this
27 goes onto my real cost anyway. I pay for it one
28 way or the other.

29 DR. ROSS: Mr. Dunster, do you
30 have some documentation of these handling methods



1 that you could provide us with?

2 MR. DUNSTER: I imagine that
3 you could get it from talking to the Golden office
4 or probably some of the regional specialists or
5 even the people down in Victoria, who are their
6 provincial specialists.

7 MR. FOX: What you are really
8 suggesting is that you get rid of all the stumps
9 and slash and logs from the area that you are
10 clearing, which I presume burning is acceptable,
11 is that true?

12 MR. DUNSTER: Yes, burning is
13 the recommended treatment.

14 THE CHAIRMAN: Any other
15 general questions? I know Bill Ross has at least
16 a couple of questions. Perhaps you would like to
17 go forward with those now?

18 DR. ROSS: The first question
19 I have deals with the visibility of the vent stack.
20 In the Red Book on page 23 you make note that when
21 the vent stack facility is viewed from Glacier
22 Park, it will not be visible to the naked eye
23 because the distance is more than a mile. I do not
24 think I understand the logistics of why something
25 is invisible because it is more than a mile away.

26 You also note that when viewed
27 from Summit Monument, it would be barely visible
28 since it is more than half a mile away. It seems
29 that distance and visibility are two separate
30



1 issues and I am puzzled about that.

2 The third point at the bottom
3 of the page makes reference to being barely visible
4 again because of it being more than 1,200 feet
5 away.

6 I am puzzled because there seems
7 to be some -- not entirely inconsistencies, but some
8 puzzling explanations linked why things are visible
9 or how visible they are.

10 MR. FOX: I think what the basis
11 of that is you would be looking at -- whatever
12 structure is visible, you would be looking at it
13 through trees. Now some trees are shorter than
14 the others and some are taller if you like. So you
15 are only going to see little parts of it, and if
16 you got any movement in the trees, your eyes are
17 going to tell you you are seeing very much.
18 That is really what it is telling you. In other
19 words, if you are looking at an object that is
20 relatively small at that distance, you are going
21 to have great difficulty in picking it up.

22 DR. ROSS: My recollection is --

23 MR. FOX: Particularly if I colour
24 it green.

25 MR. TENCH: And paint some trees
26 on it!

27 DR. ROSS: My recollection is
28 that you said the top 10 or 15 feet of that
29 structure would be visible. Now it was not clear
30



1 to me whether you were talking about the actual
2 vent stacks or the building structure.

3 MR. FOX: Just the two little vent
4 stacks that go up on the edge of the building. You
5 will never see the roof of the building.

6 DR. ROSS: You will never see
7 the roof of the building from anywhere?

8 MR. FOX: That is correct.

9 DR. ROSS: Okay, that was not
10 clear to me and I thought I understood that and
11 I wanted to make sure that my understanding was
12 correct.

13 MR. FOX: You will never see the roof
14 of the building per se at all, Doctor Ross. You
15 will see the top parts of the two vents which are
16 roughly at either end of the building.

17 MR. TENCH: I defy you, Bill Ross,
18 to decide what is the roof and what is part of that
19 vent structure sticking up there, because they
20 both look the same as far as I can tell from
21 the isometric sketch.

22 DR. ROSS: I may or may not be
23 able to tell but clearly Mr. Fox is because he
24 just told me I could see one but not the other.
25 I think that clarifies what I was looking for
26 there.

27 The second point was simply a
28 confusion on my part. A year ago the work camps
29 were sized at 250 persons per work camp and now
30



1 they are sized at about 400 persons per work camp.
2 I wonder if you could explain to me what has happened in
3 the interim to change that?

4 MR. FOX: I think I can. I would
5 say that we have gone into the size of the work
6 camps certainly a lot more thoroughly since a year
7 or so ago. We visited, at least I have visited
8 some actual tunnel jobs that have been underway and
9 discussed this with a number of contractors, and
10 we got a more precise figure from those people on
11 what their actual work force would have to be, and
12 it had increased over what we were figuring a year ago.
13 In addition to that with the possibility of only
14 having two camps to work out of for both ends
15 of the tunnel, the ventilation shaft and the short
16 tunnel, we decided to put all the people in two
17 camps, and the way that will have to work is the
18 owner, being C. P. Rail, will have to operate those
19 camps.
20

21 So under that set of rules I can
22 put any contractor's men in any camp I want, because
23 we are paying for it. At the camp for the west
24 portal, we will have the tunnel crew, and we will
25 have the ventilation shaft crew in there; we will
26 have a number of our own engineering staff in there;
27 we will have surveyors in there, and we will have
28 all the camp attendant people in there, plus all
29 the supervisory staff for the various contractors,
30 and a number of our own inspectors and supervisors.



1
2 So when we added them all up, we
3 came to a substantially higher figure than we
4 had the previous year. Now having said that, I also
5 said let us not have any shortage of rooms, so
6 there is probably a few extra rooms in those camps,
7 for this particular reason: you can live with one
8 or two vacant rooms, but you sure as hell cannot
9 live with situations where you need more rooms and
10 you have not got them, and then it becomes very
11 critical then.

12 THE CHAIRMAN: Could I just on
13 work camps follow up on that -- I have not looked
14 at your plans that closely, but what are these
15 fellows going to do for recreation in this area?
16 You told us you are going to try and make it a dry
17 camp. They are not going to get any transportation
18 except once a week to get out, and I imagine they
19 will only spend so much time looking at the scenery.
20 Are there going to be some facilities for them?

21 MR. FOX: Oh yes, there is a
22 recreational facility built into any of these
23 camps, and you have your pool tables, and your
24 television with at least two dishes, so they can
25 get all kinds of stations; you have these -- what
26 do they call those things where you throw your disc
27 up and down the table -- whatever they are called,
28 and ping pong tables. Hell they live better there
29 than they do at home. The only thing they have
30 not got, they have not got the ladies.



1 THE CHAIRMAN: I think I will
2 pass the question back to you, Bill!

3 DR. ROSS: This may be partly
4 for you, Mr. Fox, or it may be perhaps for Mr.
5 Gallacher as Chairman of the Environmental
6 Committee. One of the task that was assigned
7 to that committee was to ensure that contractors
8 receive briefings on environmental requirements prior
9 to and during construction. I wonder how that was
10 handled in the last year? Were the individual
11 workers given any instruction or briefings or
12 whatever, and would you plan to do that any
13 differently in the future in dealing with contractors
14 than you did in the past year?

15 MR. GALLACHER: No really we were
16 a bit lax on that particular part of the job. We
17 did propose to C.P. to put a program together and
18 I really do not know what C. P. did with that but
19 we never did get an answer on it. We were going
20 to hire an audio-visual expert --

21 MR. FOX: You got an answer on it,
22 Bill Gallacher, if you remember back a little bit.

23 MR. GALLACHER: I remember Mr.
24 Fox saying the only guy that is going to spend my
25 money is Fox, but you never did say you were
26 willing to share some.

27 MR. FOX: I think I can clarify
28 a little bit, Bill. I think it was left this way
29 and I did make that remark, so I will not
30



1 apologize for it. It was left this way -- that
2 chap -- I guess Mike you were the guy that dug
3 him out of woodwork, was supposed to come in to
4 see me in Calgary and I am still waiting. I have
5 never yet seen him, and I do not even recall his
6 name. He came from around Canmore was it not?
7 I never heard from him.
8

9 DR. ROSS: The reason for my
10 question, of course, is I believe you propose to
11 provide certain briefings to the workers in the
12 camps especially dealing with bear problems to
13 make sure, to try and avoid them, and I believe
14 that Parks -- I am sorry; I am really putting words
15 in your mouth, but I believe that Parks would
16 support that sort of precautionary measure, at
17 least in the case of the work camps ending up in
18 the parks, and if that is the case, then I am
19 trying to anticipate how this would be handled given
20 how it was, or in this case, was not handled in the
21 past?

22 MR. FOX: Well, insofar as the
23 past year is concerned, we did not have any camps
24 to worry about. They all went up to the Glacier
25 Park Lodge and gave them lots of money, but there
26 is no problems with camps this past year. We had
27 a very small work force up there. So really to
28 follow that line of reasoning there was no need to talk
29 to the guys about bears around camps, because it
30 was immaterial. Certainly when the main camps are



1 established that is going to have to be followed
2 and dealt with.

3 DR. ROSS: But there was one
4 reason for providing these briefings and that was
5 that it was recommended by this Panel and approved
6 by Cabinet, but that is a separate issue, I guess.

7 MR. FOX: I appreciate, Doctor
8 Ross, what you are saying but if you have not got
9 a camp there is not much sense of talking to the
10 men about what they should or should not do in a
11 camp when it comes to bears until we get a camp
12 in place.

13 DR. ROSS: That is only one of
14 the environmental requirements and issues which the
15 contractors ought to have been briefed on:

16 "prior to and during construction".

17 MR. FOX: That part was covered with
18 the contractors. It was not covered by the
19 Environmental Committee. It was covered through
20 the Implementation Committee.

21 DR. ROSS: Could you elaborate
22 on what was done then?

23 MR. FOX: It was carried out
24 with the Environmental Coordinator present, my
25 supervisory staff present and the contractors
26 present and the jobs were dealt with insofar as
27 the impact on environment was concerned.

28 They were certainly made aware
29 of all of our concerns and what they should or
30



PM-E

1 should not do, and that was done at the outset.

2
3 MR. GALLACHER: May I add to that
4 please? The Foundation Company of Canada, their
5 supervisory staff, approached us to get a man into
6 the camp once they had a camp established just to
7 do that and we were prepared to do that. As a
8 matter of fact we had a retired warden lined up
9 for it, but since there was no camps established,
10 we were at a standstill. We were stymied.

11 MR. TENCH: I would just like to
12 clarify, Mr. Fox. In other words, you got to the
13 contractor, the general contractor, to indicate
14 the sorts of things he would not do with his machinery
15 in particular, that cause damage. Did it go any
16 further than the sort of principal of the contracting
17 firm? Did he line up his crew in turn or did
18 Parks come in and talk to the actual operators?

19 MR. FOX: I will let Parks answer
20 that part themselves but I cannot answer whether
21 they went any further themselves. We dealt with
22 the contractor's representatives.

23 MR. TENCH: And then they would
24 be sending in the specification no doubt to start
25 the ball rolling for this sort of condition?

26 MR. FOX: That is correct. There
27 was a very strict clause in there about environment
28 problems.

29 MR. TENCH: Did you have anything
30 to add to that, Mike, because to put it in the



PM-E

1 specification that often does not filter down
2 anyway. To talk to the boss of the contracting
3 outfit does not necessary mean it is going any
4 further either.

5 MR. MCKNIGHT: Yes, very early
6 on I certainly recognized that and I contacted
7 an audio-visual specialist that I was familiar
8 with and the work I was familiar with -- he had
9 prepared these type of programs before. What I
10 had in mind was basically an automated program
11 so that each worker when they came on the site
12 would be herded into a room and sat down and would
13 at least have to sit through this -- you know,
14 how much he absorbed. I felt it was important
15 that it be a very professional program because I
16 think you can do more harm than good if you go at
17 it in a slap-dash manner.

18 John, in answer to your question,
19 I am afraid to say that the extremely negative
20 response we got from you when it was brought up,
21 I just did not carry it forward at that time. We
22 have gone forward now, Parks Canada, with the proposal
23 because we do construction activities in the National
24 Parks. We are also making a proposal with D.P.W.
25 for a joint funding project rather than just a
26 specific program just for the Rogers Pass project.
27 We are now working towards the type of more general
28 project that could be used for other construction
29 jobs with the idea there may be a short segment
30



1 tailor-made to the particular project you are
2 working on.

3 I still think that would be an
4 excellent tool to get to the workers. As far as
5 the Implementation Committee goes we arranged to
6 have an initial meeting with the contractors whereby
7 we virtually managed that he be prepared to come
8 to the meeting with a work plan. So that we knew
9 the types of things, the types of procedures he
10 planned to use, and during those initial meetings
11 a number of the environmental issues surfaced
12 immediately. The first question was: well, it
13 says in the contract that I cannot do this, does
14 it really mean it? And we were pretty firm in
15 telling them, yes, that that is exactly what it
16 does mean and the issues like these temporary
17 bridges they initially could not believe that we
18 would not let them drive their machinery through
19 the creek. The first thing was, well, how do I
20 get to the other side, and to Mr. Fox's credit
21 he pointed out to me that probably in the past we
22 had been a little bit too liberal with these guys
23 and been a little bit too sympathetic to their
24 problems and he indicated to me that those guys
25 bid on it in good faith and the information was
26 in the contract and we took the position with them
27 that they had first better explore all the alternatives.
28 Do not immediately come back and say, oh, how am
29 I going to get my machinery across to the other side
30



1 to build the bridge in the first place.

2 So we were really hard on them
3 initially and then if they had insurmountable
4 problems, then sort of come back through our
5 regular meetings and work it out.

6 DR. ROSS: While you are up
7 there, Mike, we cut you a little short last night,
8 and one of the things I would have liked to have
9 pursued with you and will do it now very briefly
10 at least, is to ask you how you might improve
11 the Environmental Coordinator position if it were
12 within your power to do so?

13 Are there certain things that
14 you would like to -- are there certain powers that
15 you now lack? Is there expertise that you need
16 access to but do not have? Essentially, if you
17 had it to do over again, what would you change to
18 improve the effectiveness of the position? Not the
19 salary, the effectiveness.
20

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MR. McKNIGHT: Well, I could be a lot more effective if I made a lot more money, but ---

THE CHAIRMAN: It is not often a public servant gets handed an opportunity to answer a question like this.

MR. McKNIGHT: Usually it is asked by a guy that cannot do anything about it anyway:

One of the problems I found was attempting to make the punishment fit the crime. One of the only real methods we have to rectify problems sometimes is a shut down in the work, and in a lot of cases that is such a drastic measure, you know, when you are talking about the number of men, the amount of equipment, it seems that it is so drastic that it is very seldom used, and unfortunately or one of the only solutions I have found to it is that you basically end up making a nuisance of yourself, if you like. You go to the project supervisor and say, look, come on out, I want to show you this, we have got a problem here. If it is serious, I have shut down an individual operation until the supervisor gets out there and say, all right, you know, we agreed to do it this way, you have chosen to go and do it another way.

If nothing else, their time is awfully valuable, and they only do that a few times, and they either get extremely annoyed and throw their hard hat in the corner or they start coming around to the sort of things that you want to do.



F-2

1 Generally I have found with them, as I said the
2 other night, the guys are pretty reasonable men
3 and they are pretty honourable men, and once they
4 have told you they will do something, by and large
5 they do it.

6 That is one of the problems I have
7 found, though, is that these little recurring
8 problems, it is difficult to find a solution. I
9 often thought that a monetary solution might be a
10 help. You would impose a fine on them, but you
11 have to be really careful with that because the
12 punishment would really have to fit the crime there.
13 If it did not, they would just merely write you out
14 a cheque for another infringement and carry on,
15 and that certainly would defeat the purpose.

16 That is not probably a very good
17 answer, but I certainly found it a difficult problem
18 to deal with and we have been doing the best we can
19 with it.

20 DR. ROSS: Well, for the time being
21 I will let you off the hook, but give some more
22 thought to that question and if by Calgary you have
23 some more insights, you can give me a response then.

24 Let me suggest to Mr. Gallacher
25 that he give some thought to the same question about
26 the Environmental Committee. We are getting a little
27 late to pursue it now, but at least that is something
28 we can think about.

29 MR. McKNIGHT: I think one of the
30



F-3

1 things I am looking forward to in Calgary is talking
2 to your experts because I think they have been
3 involved in pipeline construction jobs and that
4 sort of thing, and I would be interested to hear
5 how it was handled in the projects that they
6 supervise.

7 DR. ROSS: I have just one last
8 and I think fairly brief question for Mr. Fox.

9 It deals with the construction
10 schedule and it deals specifically with the timing
11 of the surface route construction and laying track.

12 It looks to me, as I read through
13 the document on pages 49 and 50 under Construction
14 Schedule that the actual surface route seems to be
15 finished about June of 1986, which is a good two years
16 prior to the completion of the rest of the work.
17 That seems to me to make it quite off the critical
18 path.

19 MR. FOX: Not really, Dr. Ross,
20 because we need that railroad in there at that time.

21 First of all, we want to get that
22 surface route built, particularly up to the Stoney
23 Creek area so that when we get our foundations in
24 for the very large tressel we have to build, we
25 can build it off the railway. In other words, we
26 will have to bring all our bridge spans in by
27 railway and then we will actually build it off the
28 railway.
29

30 So getting that railroad in place



F-4

1 is critical, and once we get the tressel in place
2 we can get work trains over it, we will then be able
3 to deliver hopefully precast panel lining right to
4 the tunnel mouth. That is the other thought we have
5 in the back of our minds.

6 Now, I would like to make a remark
7 on the last question you gave to Mr. McKnight about
8 assistance. I have some thoughts myself on that, and
9 I think somewhere in the piece and we have not had
10 this in this past year because I guess maybe the
11 size of the job, but certainly I think when we get
12 into the major construction phase, one thing we should
13 have on staff and I am certainly prepared to look
14 after it, is a professional environmentalist.

15 From my observations, and I have
16 not made many remarks about this, but from my own
17 observations I think that perhaps will become a
18 necessity because I feel that people like Mr. McKnight
19 and my own people need professional advice from
20 somebody that knows the score on environment.

21 THE CHAIRMAN: The question that
22 comes up there is that environment is a very large
23 field.

24 MR. FOX: I am sorry?

25 THE CHAIRMAN: Sorry, the sound is
26 not that good in here.

27 The environment is a very large
28 field. When you say you need a professional
29 environmentalist, would you not be looking in fact
30



F-5

1 for various fields in which you would be looking
2 for advice and assistance?

3 MR. FOX: I do not think so.

4 THE CHAIRMAN: Maybe you could be
5 more specific as to what sort of questions ---

6 MR. FOX: Well, what I am looking
7 at is a chap, say a professional, a professional
8 insofar as he has gone through the professional
9 universities in the fields of study that he should
10 have taken or did take and he has had some real
11 good experience in the field and knows from actual
12 experience in construction if you do this, what the
13 effect will be before you do it so we can get some
14 proper, good professional advice. That is what I am
15 looking for.

16 THE CHAIRMAN: You are really looking
17 for a hybrid, then, somebody that knows construction
18 and the environment field.

19 MR. FOX: That is right, and these
20 people are available. They are available right now
21 by the dozen, and that is the type of guy I think
22 would be an immense help to us in that particular
23 sphere of operations.

24 THE CHAIRMAN: Are there any
25 further questions, comments from members of the
26 public here tonight? If not, I think, do you
27 have any final comments you would like to make,
28 Mr. Fox?
29

30 MR. FOX: I do not think so, thank



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1 you, Mr. Chairman.

2 THE CHAIRMAN: Well, I would like
3 to thank you all for coming along this evening. We
4 have had a full discussion, and we will be
5 proceeding to Calgary tomorrow where we will be
6 going into details of various technical points that
7 have come up in these sessions, plus some new ones.
8

9 Thank you again for coming along
10 and thank you, those that asked questions or made
11 presentations. Good night.

12 ---Whereupon the hearing adjourned at 10:10 p.m.
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